



Serial Device Servers

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Serial Device Servers



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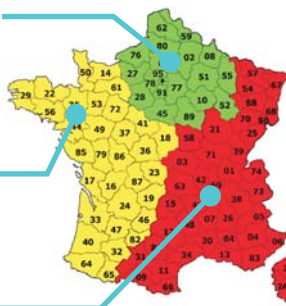
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Groupe 2AR

General-purpose Device Server Selection Guide



	NPort® DE-211	NPort® DE-311	NPort® 5110/5110-T	NPort® 5130/5130-T	NPort® 5150/5150-T
LAN Interface					
10/100BaseT(X)	1 x 10 Mbps, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector
100BaseFX	---	---	---	---	---
1.5 KV Magnetic Isolation	√	√	√	√	√
Serial Interface					
Number of Ports	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232	1 x RS-232/422	1 x RS-232/422/485
Connector	DB25 female	DB9 female	DB9 male	DB9 male	DB9 male
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark				
Flow Control	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, DTR/DSR, XON/XOFF	XON/XOFF	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF
Baudrate	50 bps to 230.4 Kbps	50 bps to 230.4 Kbps	110 bps to 230.4 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps
15 KV ESD Protection	√	√	√	√	√
2 KV Optical Isolation	---	---	---	---	---
On-site Configuration					
LCD Panel with 4 push buttons	---	---	---	---	---
Software					
Network Protocols	DHCP, BootP, Telnet,, TCP, UDP, IP, ICMP, ARP		ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP		
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility				
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)				
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, Ethernet Modem		Real COM, TCP Server, TCP Client, UDP, Pair Connection, Reverse Telnet, Ethernet Modem, Disabled		
Physical Characteristics					
Housing	SECC (1 mm)	SECC (1 mm)	Aluminum (1 mm)	Aluminum (1 mm)	Aluminum (1 mm)
Dimensions	67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)	67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)	52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)	52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)	52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)
Environmental Limits					
Operating Temperature	Standard Models: 0 to 55°C (32 to 131°F); Wide Temp. Models: -40 to 75°C (-40 to 167°F)				
Operating Humidity	5 to 95% RH				
Storage Temperature	-20 to 85°C (-4 to 185°F)				
Power Requirements					
Input Voltage	12 to 30 VDC	9 to 30 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption	150 mA @ 12 V max.	300 mA @ 9 V max.	128.7 mA @ 12 V, 72 mA @ 24 V	200 mA @ 12 V, 106 mA @ 24 V	200 mA @ 12 V, 106 mA @ 24 V
Burst Protection (EN61000-4-4: EFT/B)	---	---	1 KV	1 KV	1 KV
Surge Protection (EN61000-4-5)	---	---	0.5 KV	0.5 KV	0.5 KV
Regulatory Approvals					
EMC	CE (EN55022 Class B, EN55024 Class B), FCC Part 15 Subpart B		CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A		
Safety	UL (UL60950), TÜV (EN60950)		UL (UL60950-1), CUL, TÜV (EN60950-1)		
Medical	---	---	---	---	---
Marine	---	---	---	---	---
Reliability					
Buzzer, Realtime Clock, Watchdog Timer	---	---	WDT only	WDT only	WDT only
MTBF	347822 hrs	225529 hrs	279122 hrs	246505 hrs	246034 hrs
Warranty	5 years	5 years	5 years	5 years	5 years

General-purpose Device Server Selection Guide (continued)



	NPort® 5210/5210-T	NPort® 5230/5230-T	NPort® 5232/5232-T	NPort® 5232I/5232I-T
LAN Interface				
10/100BaseT(X)	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector
100BaseFX	---	---	---	---
1.5 KV Magnetic Isolation	√	√	√	√
Serial Interface				
Number of Ports	2 x RS-232	1 x RS-232, 1 x RS-422/485	2 x RS-422/485	2 x RS-422/485
Connector	8-pin RJ45	Terminal Block	Terminal Block	Terminal Block
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark			
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF	XON/XOFF	XON/XOFF
Baudrate	110 bps to 230.4 Kbps	110 bps to 230.4 Kbps	110 bps to 230.4 Kbps	110 bps to 230.4 Kbps
15 KV ESD Protection	√	√	√	√
2 KV Optical Isolation	---	---	---	√
On-site Configuration				
LCD Panel with 4 push buttons	---	---	---	---
Software				
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP			
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility		Web Console, Telnet Console	
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)			
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, Reverse Telnet, Disabled			
Physical Characteristics				
Housing	Aluminum (1 mm), providing IP30 protection	Aluminum (1 mm), providing IP30 protection	Aluminum (1 mm), providing IP30 protection	Aluminum (1 mm), providing IP30 protection
Dimensions	67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)	67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)	67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)	67 x 100.4 x 35 mm (2.64 x 3.95 x 1.37 in)
Environmental Limits				
Operating Temperature	Standard Models: 0 to 55°C (32 to 131°F); Wide Temp. Models: -40 to 75°C (-40 to 167°F)			
Operating Humidity	5 to 95% RH			
Storage Temperature	-20 to 85°C (-4 to 185°F)			
Power Requirements				
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption	305 mA @ 12 V max.	347.1 mA @ 12 V max.	259.6 mA @ 12 V max.	509.4 mA @ 12 V max.
Burst Protection (EN61000-4-4: EFT/B)	1 KV	1 KV	1 KV	1 KV
Surge Protection (EN61000-4-5)	0.5 KV	0.5 KV	0.5 KV	0.5 KV
Regulatory Approvals				
EMC	CE (EN55022 and EN55024 Class A), FCC Part 15 Subpart B Class A			
Safety	UL (UL60950-1), TÜV (EN60950-1)			
Medical	EN60601-1-2 Class B, EN55011			
Marine	DNV	DNV	DNV	DNV
Reliability				
Buzzer, Realtime Clock, Watchdog Timer	√	√	√	√
MTBF	134850 hrs	106955 hrs	102344 hrs	87083 hrs
Warranty	5 years	5 years	5 years	5 years

General-purpose Device Server Selection Guide (continued)



	NPort® 5410	NPort® 5430	NPort® 5430I	NPort® 5450	NPort® 5450I
LAN Interface					
10/100BaseT(X)	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector
100BaseFX	---	---	---	---	---
1.5 KV Magnetic Isolation	√	√	√	√	√
Serial Interface					
Number of Ports	4 x RS-232	4 x RS-422/485	4 x RS-422/485	4 x RS-232/422/485	4 x RS-232/422/485
Connector	DB9 male	Terminal Block	Terminal Block	DB9 male	DB9 male
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark				
Flow Control	DSR/DTR, RTS/CTS, XON/XOFF	XON/XOFF	XON/XOFF	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF
Baudrate	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps
15 KV ESD Protection	√	√	√	√	√
2 KV Optical Isolation	---	---	√	---	√
On-site Configuration					
LCD Panel with 4 push buttons	√	√	√	√	√
Software					
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTP, Rtelnet, ARP				
Configuration Options	Web Console, Telnet Console, Windows Utility				
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)				
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, Reverse Telnet, Disabled				
Physical Characteristics					
Housing	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)
Dimensions	158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)	158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)	158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)	158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)	158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)
Environmental Limits					
Operating Temperature	0 to 55°C (32 to 131°F)				
Operating Humidity	5 to 95% RH				
Storage Temperature	-20 to 70°C (-4 to 158°F)				
Power Requirements					
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption	350 mA @ 12 V max.	350 mA @ 12 V max.	585 mA @ 12 V max.	350 mA @ 12 V max.	554 mA @ 12 V max.
Burst Protection (EN61000-4-4: EFT/B)	4 KV	4 KV	4 KV	4 KV	4 KV
Surge Protection (EN61000-4-5)	2 KV	2 KV	2 KV	2 KV	2 KV
Regulatory Approvals					
EMC	CE (EN55022 and EN55024 Class A), FCC Part 15 Subpart B Class A				
Safety	UL (UL60950-1), CUL, TÜV (EN60950-1)				
Medical	EN60601-1-2 Class B, EN55011				
Marine	DNV	DNV	DNV	DNV	DNV
Reliability					
Buzzer, Realtime Clock, Watchdog Timer	√	√	√	√	√
MTBF	205153 hrs	201699 hrs	114540 hrs	206903 hrs	206903 hrs
Warranty	5 years	5 years	5 years	5 years	5 years

General-purpose Device Server Selection Guide (continued)



	NPort® 5610-8/16	NPort® 5610-8/16-48V	NPort® 5630-8/16	NPort® 5650-8/16	NPort® 5650-8/16-M-SC	NPort® 5650-8/16-S-SC
LAN Interface						
10/100BaseT(X)	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	1, RJ45 connector	---	---
100BaseFX	---	---	---	---	1, SC connector	1, SC connector
1.5 KV Magnetic Isolation	✓	✓	✓	✓	✓	✓
Serial Interface						
Number of Ports	8 or 16 x RS-232	8 or 16 x RS-232	8 or 16 x RS-422/485	8 or 16 x RS-232/422/485	8 or 16 x RS-232/422/485	8 or 16 x RS-232/422/485
Connector	8-pin RJ45	8-pin RJ45	8-pin RJ45	8-pin RJ45	8-pin RJ45	8-pin RJ45
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	DSR/DTR, RTS/CTS, XON/XOFF	DSR/DTR, RTS/CTS, XON/XOFF	XON/XOFF	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF
Baudrate	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps
15 KV ESD Protection	✓	✓	✓	✓	✓	✓
2 KV Optical Isolation	---	---	---	---	---	---
On-site Configuration						
LCD Panel with 4 push buttons	✓	✓	✓	✓	✓	✓
Software						
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTP, ARP, PPP, SLIP, Rtelnet, RFC2217					
Configuration Options	Web Console, Telnet Console, Windows Utility					
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)					
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Reverse Telnet, Disabled, PPP					
Physical Characteristics						
Housing	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)
Dimensions	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)	440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
Environmental Limits						
Operating Temperature	0 to 55°C (32 to 131°F)					
Operating Humidity	5 to 95% RH					
Storage Temperature	-20 to 75°C (-4 to 167°F)					
Power Requirements						
Input Voltage	100 to 240 VAC, 47 to 63 hz	±48 VDC (20 to 72 VDC, -20 to -72 VDC)	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz
Power Consumption	141 mA @ 100 VAC, 93 mA @ 240 VAC	135 mA @ 48 VDC	152 mA @ 100 VAC, 98 mA @ 240 VAC	158 mA @ 100 VAC, 102 mA @ 240 VAC	174 mA @ 100 VAC, 113 mA @ 240 VAC	164 mA @ 100 VAC, 110 mA @ 240 VAC
Burst Protection (EN61000-4-4: EFT/B)	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV
Surge Protection (EN61000-4-5)	2 KV	2 KV	2 KV	2 KV	2 KV	2 KV
Regulatory Approvals						
EMC	CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A NPort® 5610 only: IEC61000-4-12					
Safety	UL (UL60950-1), TÜV (EN60950-1)					
Medical	EN60601-1-2 Class B, EN55011					
Marine	DNV	DNV	DNV	DNV	DNV	DNV
Reliability						
Buzzer, Realtime Clock, Watchdog Timer	✓	✓	✓	✓	✓	✓
MTBF	NPort® 5610-8: 97294 hrs NPort® 5610-16: 94928 hrs	NPort® 5610-8-48V: 96758 hrs NPort® 5610-16-48V: 94417 hrs	NPort® 5630-8: 118405 hrs NPort® 5630-16: 91483 hrs	NPort® 5650-8: 117584 hrs NPort® 5650-16: 104767 hrs	NPort® 5650-M-SC-8: 116914 hrs NPort® 5650-M-SC-16: 87528 hrs	NPort® 5650-S-SC-8: 116914 hrs NPort® 5650-S-SC-16: 87528 hrs
Warranty	5 years	5 years	5 years	5 years	5 years	5 years

General-purpose Device Server Selection Guide (continued)



	NPort® 5610-8-DT	NPort® 5610-8-DT-J	NPort® 5650-8-DT	NPort® 5650I-8-DT	NPort® 5650-8-DT-J
LAN Interface					
10/100BaseT(X)	2, RJ45 connector	2, RJ45 connector	2, RJ45 connector	2, RJ45 connector	2, RJ45 connector
100BaseFX	---	---	---	---	---
1.5 KV Magnetic Isolation	√	√	√	√	√
Serial Interface					
Number of Ports	8 x RS-232	8 x RS-232	8 x RS-232/422/485	8 x RS-232/422/485	8 x RS-232/422/485
Connector	DB9 male	8-pin RJ45	DB9 male	DB9 male	8-pin RJ45
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark				
Flow Control	DSR/DTR, RTS/CTS, XON/XOFF	DSR/DTR, RTS/CTS, XON/XOFF	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF, ADDC®	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF, ADDC®	DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF, ADDC®
Baudrate	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps	50 bps to 921.6 Kbps
15 KV ESD Protection	√	√	√	√	√
2 KV Optical Isolation	---	---	---	0	---
On-site Configuration					
LCD Panel with 4 push buttons	√	√	√	√	√
Software					
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTP, Rtelnet, ARP, RFC2217				
Configuration Options	Web Console, Telnet Console, Windows Utility				
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)				
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Reverse Telnet, Disabled, PPP				
Physical Characteristics					
Housing	SECC sheet metal (0.8 mm)	SECC sheet metal (0.8 mm)	SECC sheet metal (0.8 mm)	SECC sheet metal (0.8 mm)	SECC sheet metal (0.8 mm)
Dimensions	197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)	197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)	197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)	197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)	197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)
Environmental Limits					
Operating Temperature	0 to 55°C (32 to 131°F)				
Operating Humidity	5 to 95% RH				
Storage Temperature	-20 to 70°C (-4 to 158°F)				
Power Requirements					
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption	621 mA @ 12 V, 140 mA @ 48 V	621 mA @ 12 V, 140 mA @ 48 V	580 mA @ 12 V, 156 mA @ 48 V	1066 mA @ 12 V, 200 mA @ 48 V	580 mA @ 12 V, 156 mA @ 48 V
Burst Protection (EN61000-4-4: EFT/B)	4 KV	4 KV	4 KV	4 KV	4 KV
Surge Protection (EN61000-4-5)	2 KV	2 KV	2 KV	2 KV	2 KV
Regulatory Approvals					
EMC	CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A				
Safety	UL (UL60950-1), TÜV (EN60950-1)				
Medical	---	---	---	---	---
Marine	---	---	---	---	---
Reliability					
Buzzer, Realtime Clock, Watchdog Timer	√	√	√	√	√
MTBF	163356 hrs				
Warranty	5 years	5 years	5 years	5 years	5 years

Industrial-grade Device Server Selection Guide



	NPort® IA5150/5150-T	NPort® IA5150I/5150I-T	NPort® IA5150I-M-SC/5150I-M-SC-T	NPort® IA5150I-M-SC/5150I-M-SC-T	NPort® IA5150I-S-SC/5150I-S-SC-T	NPort® IA5150I-S-SC/5150I-S-SC-T	NPort® IA5250/5250-T
LAN Interface							
10/100BaseT(X)	2, RJ45 connector	2, RJ45 connector	---	---	---	---	2, RJ45 connector
100BaseFX	---	---	Multi-mode, SC connector	Multi-mode, SC connector	Single-mode, SC connector	Single-mode, SC connector	---
1.5 KV Magnetic Isolation	√	√	---	---	---	---	√
Serial Interface							
Number of Ports	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	2 x RS-232/422/485
Connector	RS-232: DB9 male, RS-422/485: Terminal Block	RS-232: DB9 male, RS-422/485: Terminal Block	RS-232: DB9 male, RS-422/485: Terminal Block	RS-232: DB9 male, RS-422/485: Terminal Block	RS-232: DB9 male, RS-422/485: Terminal Block	RS-232: DB9 male, RS-422/485: Terminal Block	DB9 male
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark						
Flow Control	RTS/CTS (RS-232 only), XON/XOFF						
Baudrate	110 bps to 230.4 Kbps						
15 KV ESD Protection	√	√	√	√	√	√	√
2 KV Optical Isolation	---	√	---	√	---	√	---
Software							
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP						
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility						
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)						
Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, Ethernet Modem, Reverse, Telnet, Disabled						
Physical Characteristics							
Housing	Polycarbonate (2 mm)						
IP30 protection	√	√	√	√	√	√	√
Dimensions	29 x 89.2 x 118.5 mm (0.82 x 3.51 x 4.57 in)						
DIN-Rail, Wall Mountable	√	√	√	√	√	√	√
Environmental Limits							
Operating Temperature	Standard Models: 0 to 55°C (32 to 131°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)						
Operating Humidity	5 to 95% RH						
Storage Temperature	-20 to 85°C (-4 to 185°F)						
Power Requirements							
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Redundant Power Inputs	√	√	√	√	√	√	√
Power Consumption	360 mA @ 12V max.	420 mA @ 12V max.	500 mA @ 12V max.	510 mA @ 12V max.	470 mA @ 12V max.	490 mA @ 12V max.	440 mA @ 12V max.
Regulatory Approvals							
EMC	FCC Part 15 Subpart B Class A, CE EN55022 Class A, CE EN55024						
Safety	UL60950-1, UL 508, TÜV EN60950-1						
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D; ATEX Class Zone 2						
IEC	IEC60068-2-27 (Shock); IEC60068-2-23 (Freefall); IEC60068-2-6 (Vibration)						
EN	EN61000-4-2 (ESD) Level 3; EN61000-4-3 (RS) Level 3; EN61000-4-4 (EFT) Level 4; EN61000-4-5 (Surge) Level 3; EN61000-4-6 (CS) Level 3; EN61000-4-8 Passed; EN61000-4-11 Passed; EN61000-4-12 Passed						
Other	Medical (ATEX Class 1 Zone 2); Marine (DNV)						
Reliability							
Buzzer, Realtime Clock, Watchdog Timer	√	√	√	√	√	√	√
Warranty	5 years (see www.moxa.com/warranty)						

Embedded Device Server Selection Guide



	NE-4110S NE-4110A	NE-4120S NE-4120A	NE-4100T	WE-2100T
Form Factor				
Typical Installation Examples				
Type	Stand-alone module	Stand-alone module	Drop-in	Drop-in
Dimensions	57 × 40 mm (2.24 × 1.57 in)	57 × 40 mm (2.24 × 1.57 in)	45 × 36 mm (1.77 × 1.42 in)	54 × 40 × 13.3 mm (2.13 × 1.57 × 0.52 in)
LAN Interface				
10/100BaseT(X)	1, RJ45	1, Pin header (5 pins)	1, Dual-in-line pin header (26 pins)	1, Dual-in-line pin connector (44 pins)
1.5 KV Magnetic Isolation	√	√	√	√
WLAN Interface				
Standard Compliance	---	---	---	IEEE 802.11a/b/g
Radio Frequency Type	---	---	---	DSSS, CCK, OFDM
Wireless Security	---	---	---	SEP, SPA, SPA2, 802.11i
Network Modes	---	---	---	Infrastructure (a/b/g), Ad Hoc (b/g)
Serial Interface				
Number of Ports	2	2	2	2
Standards for Port 1	NE-4110S: RS-232 NE-4110A: RS-422/485	NE-4120S: RS-232 NE-4120A: RS-422/485	TTL	TTL
Standards for Port 2	TTL console port	TTL console port	TTL console port	TTL console port
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark			
Flow Control	RTS/CTS, XON/XOFF			
Baudrate	110 bps to 230.4 Kbps			50 bps to 921.6 Kbps
Software				
Network Protocols	ICMP, ARP, IP, TCP, UDP, DHCP, Telnet, HTTP, SNMP, SMTP			ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, SMTP, SNTp, SSH, HTTPS
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility (for Windows 95, 98, ME, NT, 2000, XP, 2003)			Web Console, Serial Console, Telnet Console, Windows Utility (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista), Serial command mode (configured through the data port)
Driver Support	Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, XP x64, 2003 x64), Linux Real TTY driver, Unix			Windows COM driver (for Windows 98, ME, NT, 2000, XP, 2003, XP x64, 2003 x64, Vista), Linux Real TTY driver, SCO Unix, SCO OpenServer 5, UnixWare 7, UnixWare 2.1.x, SVR4.2, QNX
Operation Modes	Real COM, TCP Server, TCP Client, UDP			Real COM, TCP Server, TCP Client, UDP, RFC2217
Environmental Limits				
Operating Temperature	Standard Models: 0 to 55°C (32 to 131°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)			0 to 55°C (32 to 131°F)
Operating Humidity	5 to 95% RH			
Storage Temperature	-20 to 85°C (-4 to 185°F)			
Surface Temperature (at full baudrate of 921.6 Kbps)				
Top Panel	---	---	---	43°C, when air temp = 25°C 55°C, when air temp = 55°C
Bottom Panel	---	---	---	44.5°C, when air temp = 25°C 67.0°C, when air temp = 55°C
Power Requirements				
Input Voltage	5 VDC (±5%)	5 VDC (±5%)	5 VDC (±5%)	3.3 VDC (±5%)
Power Consumption	290 mA @ 5 VDC max.	290 mA @ 5 VDC max.	290 mA @ 5 VDC max.	921.6 Kbps (full speed): 540 mA Idle: 190 mA Ethernet mode: 670 mA Inrush current: 2100 mA
Regulatory Approvals				
EMC	CE (EN55022 Class B EN55024), FCC Part 16 Subpart Class B			CE (EN55024), 55022 Class A, ETSI EN 301 489-17, ETSI EN 301 489-1, FCC Part 15 Subpart B Class A, FCC Part 17 Subpart B Class A,
Reliability				
Watchdog Timer	√	√	√	√
Warranty	5 years (see www.moxa.com/warranty)			

Introduction to Serial Device Servers

Device server technology makes device networking easy

Device servers are used to connect serial devices to Ethernet LANs, and are able to transmit data both to and from the serial device. Moxa's NPort® line of device servers are essentially pre-programmed computers that have a real-time OS and built-in TCP/IP server, and allow you to access, manage, and configure remote facilities and equipment from anywhere in the world over the Internet.

No restrictions on host type or operating system

Any host computer that supports the TCP/IP protocol can access the NPort®'s serial ports, eliminating the need for special-purpose drivers. In addition, you will not be held back by your PC's limited number of serial bus slots.

Real COM/TTY drivers for existing software

NPort® device servers also come with Real COM/TTY drivers for accessing devices through a "virtual" COM or TTY port.



8

Serial Device Servers > Introduction to Serial Device Servers

Serial Device Server Selection Table

Number of Serial Ports	General-purpose Device Servers			Device Servers with Optical Isolation	Device Servers for Wide Temperature Applications
	RS-232	RS-422/485	RS-232/422/485		
1	NPort® 5110	NPort® 5130	NPort® DE-211 NPort® DE-311 NPort® 5150 NPort® IA5150 NPort® IA5150-M-SC NPort® IA5150-S-SC	NPort® IA5150I NPort® IA5150I-M-SC NPort® IA5150I-S-SC	NPort® 5110-T NPort® IA5150-T NPort® IA5150I-T NPort® IA5150-M-SC-T NPort® IA5150I-M-SC-T NPort® IA5150-S-SC-T
2	NPort® 5210	NPort® 5232	NPort® 5230 NPort® IA5250	NPort® 5232I	NPort® 5210-T NPort® 5230-T NPort® 5232-T NPort® IA5250-T NPort® 5232I-T
4	NPort® 5410	NPort® 5430	NPort® 5450	NPort® 5430I/5450I	---
8	NPort® 5610-8 NPort® 5610-8-48V NPort® 5610-8-DT NPort® 5610-8-DT-J	NPort® 5630-8	NPort® 5650-8 NPort® 5650-8-M-SC NPort® 5650-8-S-SC NPort® 5650-8-DT NPort® 5650-8-DT-J	NPort® 5650I-8-DT	---
16	NPort® 5610-16 NPort® 5610-16-48V	NPort® 5630-16	NPort® 5650-16 NPort® 5650-16-M-SC NPort® 5650-16-S-SC	---	---

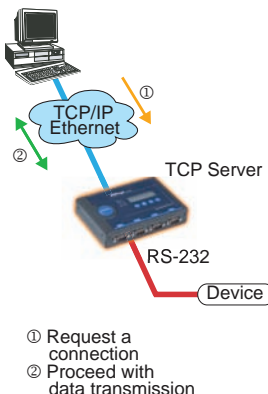
NOTE: See Chapter 7, "Terminal Servers," for information about our NPort® 6000 series of serial device servers.

NPort® Provides a Choice of Operation Modes

Socket Modes

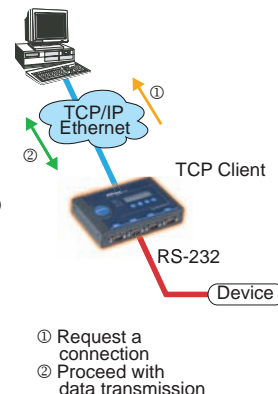
TCP Server Mode

When the NPort® is configured for TCP Server Mode, each serial port is assigned a unique IP:Port combination on the TCP/IP network, and the NPort® waits passively for a host computer to establish a connection with the attached serial device. TCP Server mode supports up to 4 simultaneous connections, allowing multiple hosts to collect data from the same serial device at the same time.



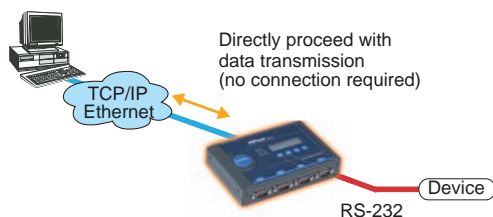
TCP Client Mode

When the NPort® is configured for TCP Client mode, the NPort® establishes a TCP connection between the attached device and a specified host computer when data is received from the attached device. After the data has been transferred, the NPort® automatically closes the connection. TCP Client mode supports up to 4 simultaneous connections, allowing multiple hosts to collect data from the same serial device at the same time.



UDP Mode

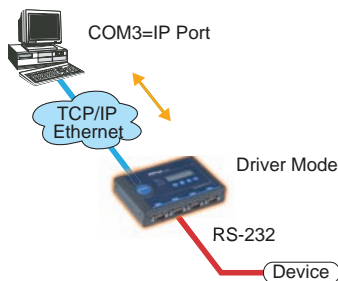
UDP mode supports up to 4 multicasting groups. In UDP mode, the attached device can exchange data simultaneously with up to 4 network destinations, and at a higher speed than when using TCP. This mode is ideal for message display applications.



Driver Modes

Real COM Mode

When configured for Real COM mode, each serial port is assigned an IP:Port combination that is mapped to a host computer's local COM or TTY port using Moxa's NPort® drivers. Legacy applications can access the attached serial device using the host's local COM or TTY port, without the need to modify serial COM software to account for network protocols.



RFC2217 Mode

When the NPort® is configured for RFC2217 mode, each serial port is assigned an IP:Port combination that is mapped by RFC2217-compliant drivers to a virtual COM port. The RFC2217 protocol defines general COM port control options based on the Telnet protocol. The NPort® supports any third party driver that is RFC2217-compliant.

Other Modes

Pair Connection Mode

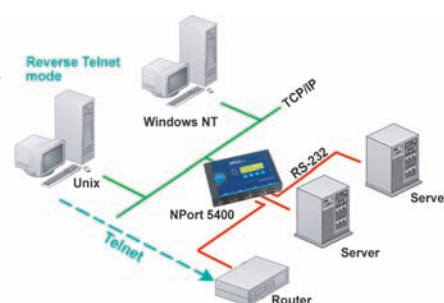
When configured for Pair Connection mode, two NPort® device servers can be used to transmit RS-232 signals over Ethernet, and in this way overcome the 15-meter limitation imposed by the RS-232 standard. One NPort® connects to the PC's COM port, and the other NPort® connects to the serial device. The two NPort®s are either connected to each other with a cross-over Ethernet cable, or are each connected to an Ethernet LAN or WAN. Both data and modem control signals can be exchanged between the PC and device over Ethernet, but DCD signals are not supported.

Ethernet Modem Mode

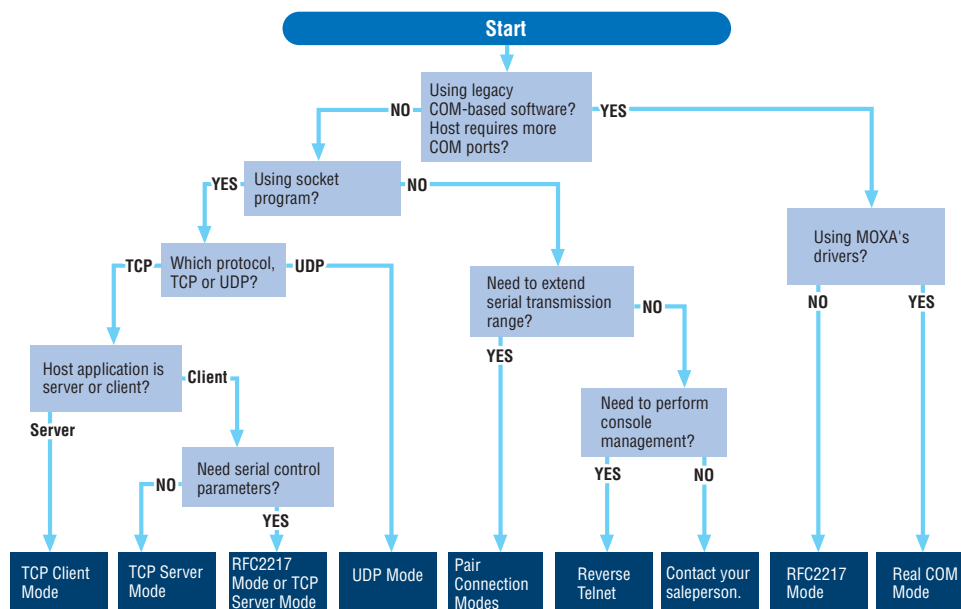
When configured for Ethernet Modem mode, the serial port on the NPort® behaves as if it were attached to a modem, except that data is transmitted over a network instead of over phone lines. Ethernet Modem Mode enables network access for legacy software that was originally designed to transmit data by modem.

Reverse Telnet Mode

When configured for Reverse Telnet mode, the NPort®'s serial ports provide a connection to a server, with connections initiated by a host over Ethernet. This is similar to TCP server mode, except Reverse Telnet mode also provides Telnet-style CR/LF conversion. Reverse Telnet mode can be used for remote console management, in which the NPort® is used to enable network access to the serial console ports of different equipment, such as routers, switches, and servers.



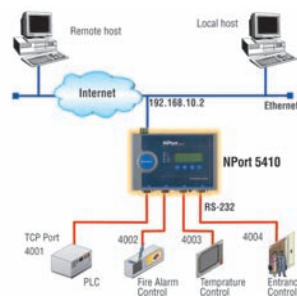
Mode Selection Flowchart



Typical Applications

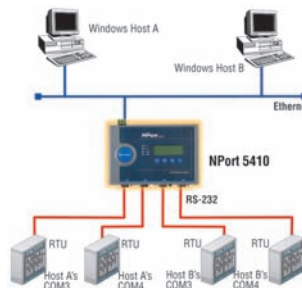
Use only one IP address to control multiple serial devices over the network

Automatic or remote data acquisition can be accomplished with NPort® 5000 device servers, which only require one IP address to connect up to 16 serial devices to an Ethernet network. By specifying the IP address and TCP port number, a host computer can access the serial devices connected to the NPort® 5000 from over the network. In the example shown here, data from the NPort® 5410's first serial port can be obtained by connecting to 192.168.10.2:4001.



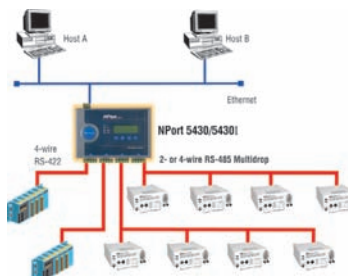
Use server sharing from a central location for greater device management flexibility

Serial devices connected to the NPort® 5000 device server can communicate over the network with more than one host computer.



Centralize RS-422/485 serial device control

Up to 31 RS-485 devices, or 9 RS-422 devices, can be connected to each serial port on the NPort® 5000 device server. The web console or Windows utility can be used to configure RS-422 or RS-485 operation for each port, with both 2-wire and 4-wire RS-485 supported.

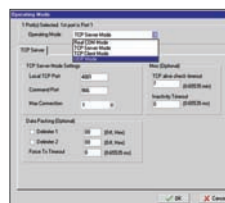
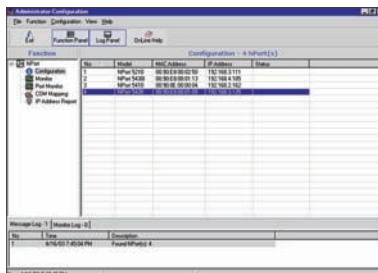
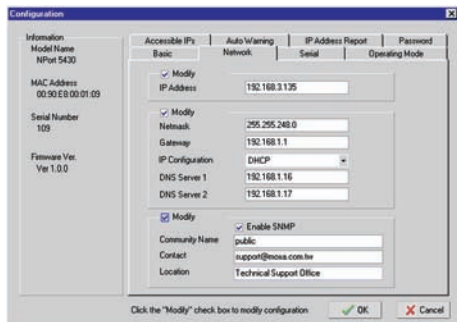


: NPort® Administrator Makes Installation Easy

NPort® Administrator is designed to make it easy to install and configure NPort® 5000 device servers over the network. Five groups of functions are supported to allow off-line COM mapping, device monitoring, and searching for NPort® device servers over the network. Both NPort® Administrator and an IP Serial Library are bundled with NPort®'s integrated software suite, giving you everything you need to manage, monitor, and reconfigure your NPort® from remote locations.

Configuration Features

- Broadcast search over the LAN for NPort® device servers
- Select and configure the NPort®'s operation mode
- Upgrade the NPort®'s firmware
- Export and import NPort® configurations



: Web Console Provides Exceptional Convenience

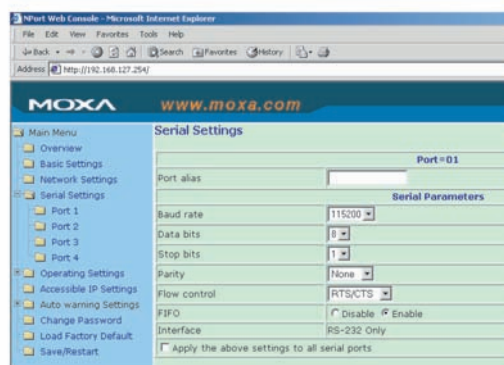
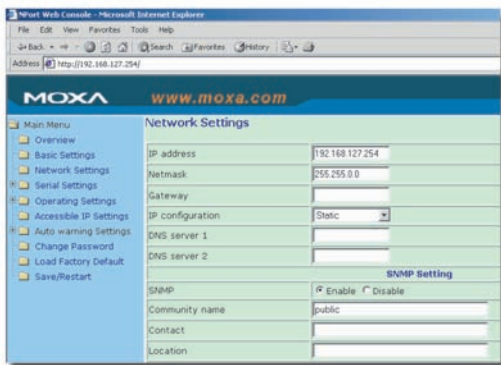
NPort® 5000 device servers are easily configured over the network with the web console or Telnet console.

Network Settings

- IP, netmask, gateway
- Static IP, DHCP, BOOTP
- DNS server

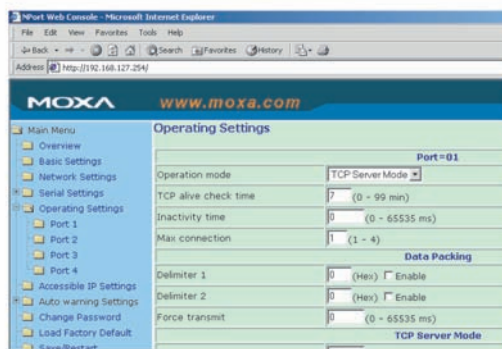
Serial Settings

- Baudrate
- Data bits, stop bit, parity
- Flow control
- Communication interface



Operation Settings

- Operation mode
- TCP alive check time
- Inactivity time
- Delimiter
- Force transmit
- Packet length
- Allow driver control
- Maximum connection



: IP Serial Library

What is IP Serial Library?

The IP Serial Library is a collection of Windows functions for NPort® 5000 device servers. Serial command sets and common subroutines are provided. The purpose of the library is to help reduce complexity and increase efficiency when programming serial communication

applications that run over a TCP/IP network. For example, Telnet is limited because it can only transfer data but cannot monitor or configure serial line parameters. The IP Serial Library can be used to add new functionality to your Telnet sessions.

Use IP Serial Library for easier socket-based serial COM programming

For programmers who are familiar with serial communication, the IP Serial Library provides well-designed function calls that have the same style as Moxa's PComm Library.

The IP Serial Library is amazingly simple and easy to understand. By including the library in your VB, C, or Delphi programming environment, you will be able to develop TCP/IP applications that can control serial communication parameters.

When Real COM mode is used, the NPort® serial device servers use two TCP ports for communication between an attached device and a host computer's Real COM driver. The two ports, a data port and a command port, provide pure data transfer without requiring encoding and decoding. With the IP Serial Library, only one port is used to communicate with a user's application, and no encoding or decoding is required.

IP Serial Library Example

```
char NPort@ip="192.168.1.10";
char buffer[255];int port = 1; /* data buffer, 255 chars */
int portid; /* port handle */
nsio_init(); /* initialize IP Serial Library */
portid = nsio_open(NPort@ip, port); /* 1st port, NPort@ IP=192.168.1.10 */
nsio_ioctl(portid, B9600, (BIT_8 | STOP_1 | P_NONE)); /* set 9600, N81 */
sleep(1000); /* wait for 1000 ms for data */
nsio_read(port, buffer, 200); /* read 200 bytes from port 1 */
nsio_close(portid); /* close this serial port */
nsio_end(); /* close IP Serial Library */
```

IP Serial API Function List

Server Control	Port Control	Input/Output Data	Port Status Inquiry	Miscellaneous
nsio_init	nsio_open	nsio_read	nsio_lstatus	nsio_break
nsio_end	nsio_close	nsio_SetReadTimeouts	nsio_data_status	nsio_break_on
nsio_rese- tserver	nsio_ioctl	nsio_write	---	nsio_break_off
nsio_checkalive	nsio_flowctrl	nsio_SetWriteTimeouts	---	nsio_breakcount
---	nsio_DTR	---	---	---
---	nsio_RTS	---	---	---
---	nsio_lctrl	---	---	---
---	nsio_baud	---	---	---
---	nsio_resetport	---	---	---

NPort® DE-211/311

1-port RS-232/422/485 serial device servers



NPort® DE-311

NPort® DE-211

- > 3-in-1 serial port: RS-232, RS-422, or RS-485
- > Versatile operation modes including TCP Server, TCP Client, UDP, Ethernet Modem, and Pair Connection
- > Real COM/TTY drivers for Windows and Linux
- > 10M and 100M Ethernet speeds detected automatically
- > 2-wire RS-485 with patented Automatic Data Direction Control (ADDC®)
- > Built-in 15 KV ESD protection for all serial signals

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



Overview

The NPort® DE-211 and DE-311 are 1-port serial device servers that support RS-232, RS-422, 4-wire RS-485, and 2-wire RS-485. The DE-211 supports 10 Mbps Ethernet connections and has a DB25 female connector for the serial port. The DE-311 supports 10/100

Mbps Ethernet connections and has a DB9 female connector for the serial port.

Both device servers are ideal for applications that involve information display boards, PLCs, flow meters, gas meters, CNC machines, and biometric identification card readers.

Specifications

Ethernet Interface

Number of Ports: 1

Speed:

NPort® DE-211: 10 Mbps

NPort® DE-311: 10/100 Mbps

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 1

Serial Standards: RS-232/422/485 (selectable by DIP Switch)

Connector:

NPort® DE-211: DB25 female

NPort® DE-311: DB9 female

Serial Line Protection: 15 KV ESD protection for all signals

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF

Baudrate: 50 bps to 230.4 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND (DE-211 only)

RS-485-2w: Data+, Data-, GND

Software

Network Protocols: DHCP, BootP, Telnet, , TCP, UDP, IP, ICMP, ARP

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Physical Characteristics

Housing: SECC sheet metal (1 mm), providing IP30 protection

Weight: 720 g

Dimensions:

Without ears: 67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)

With ears: 90.2 x 100.4 x 22 mm (3.55 x 3.95 x 0.87 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 85°C (-4 to 185°F)

Power Requirements

Input Voltage:

DE-211: 12 to 30 VDC

DE-311: 9 to 30 VDC

Power Consumption:

NPort® DE-211: 150 mA @ 12 V max.

NPort® DE-311: 300 mA @ 9 V max.

Regulatory Approvals

EMC: CE (EN55022 Class B, EN55024 Class B), FCC Part 15 Subpart B

Safety: UL (UL60950), TÜV (EN60950)

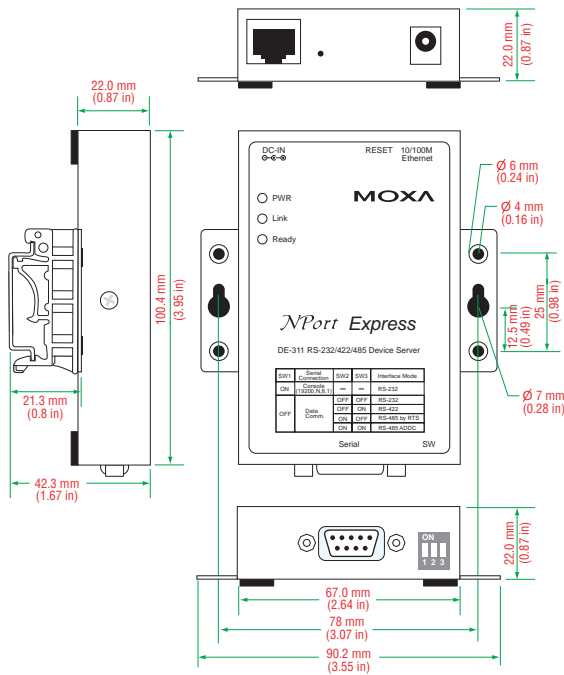
Warranty

Warranty Period: 5 years

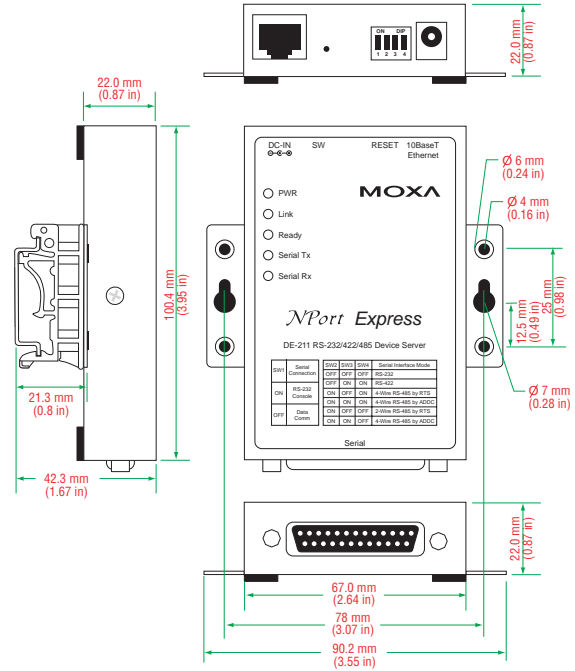
Details: See www.moxa.com/warranty

Dimensions

NPort® DE-311



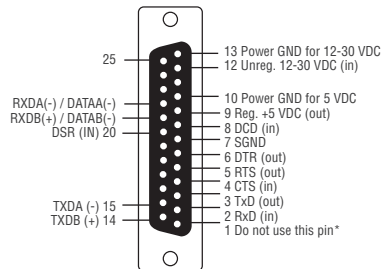
NPort® DE-211



Pin Assignment

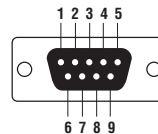
NPort® DE-211

(RS-232/422/485, DB25 female connector)



NPort® DE-311

(RS-232/422/485, DB9 female connector)



PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	RxD-(A)	----
2	TxD	RxD+(B)	----
3	RxD	TxD+(B)	Data+(B)
4	DSR	TxD-(A)	Data-(A)
5	GND	GND	GND
6	DTR	CTS-(A)	----
7	CTS	CTS+(B)	----
8	RTS	RTS+(B)	----
9	----	RTS-(A)	----

Ordering Information

Available Models

NPort® DE-211: 1-port RS-232/422/485 device server with 10 Mbps Ethernet connection

NPort® DE-311: 1-port RS-232/422/485 device server with 10/100 Mbps Ethernet connection

Optional Accessories (can be purchased separately)

NP21101: DB25 male to DB9 female cable for RS-232 transmission, 30 cm (for DE-211)

NP21102: DB25 male to DB9 male cable for RS-232 transmission, 30 cm (for DE-211)

NP21103: DB25 male terminal block kit for RS-422/485 transmission (for DE-211)

TB-M25: DB25 male DIN-Rail wiring terminal (for DE-211)

TB-M9 (for DE-311): DB9 male DIN-Rail wiring terminal (for DE-311)

DK-35A: Mounting Kit for 35-mm DIN-Rail

Package Checklist

- NPort® DE-311 or DE-211 serial device server
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card



NPort® 5100 Series

1-port RS-232/422/485 serial device servers



- > Real COM/TTY drivers for Windows and Linux
- > Standard TCP/IP interface and versatile operation modes
- > Easy-to-use Windows utility for configuring multiple device servers
- > Built-in 15 KV ESD protection for all serial signals
- > SNMP MIB-II for network management
- > Configure by Telnet or web browser
- > Adjustable termination resistor for RS-485 ports

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



Overview

NPort® 5100 device servers are designed to make serial devices network-ready in an instant. The small size of the servers makes them ideal for connecting devices such as card readers and payment

terminals to an IP-based Ethernet LAN. Use the NPort® 5100 device servers to give your PC software direct access to serial devices from anywhere on the network.

Most Cost-effective Serial-to-Ethernet Solution

Using serial device servers to connect legacy serial devices to Ethernet is now commonplace, and users expect device servers to be cost-effective and to provide a broad selection of useful functions. With its

full support of Microsoft and Linux operating systems and solid 5-year warranty, the NPort® 5100 series provides the best choice for serial-to-Ethernet converters.

Adjustable Termination and Pull High/Low Resistors

In some critical environments, termination resistors may be needed to prevent the reflection of serial signals. When using termination resistors, it is also important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor

values is universally compatible with all environments, the NPort® 5100 device servers come with jumpers for adjusting termination and pull high/low resistor values for each serial port.

Standard TCP/IP Interface and Broad Choice of Operation Modes

The NPort® 5100 device servers can be configured for TCP Server, TCP Client, UDP Server/Client, Pair Connection, or Ethernet Modem

mode, ensuring compatibility with software based on a standard network API (e.g., Winsock or BSD Sockets).

Real COM/TTY Drivers for Existing Software

The Real COM/TTY drivers provided with the NPort® 5100 device servers allow you to continue using software designed for communicating through COM/TTY ports. Installation and configuration is painless, and allows your serial devices and PC to communicate

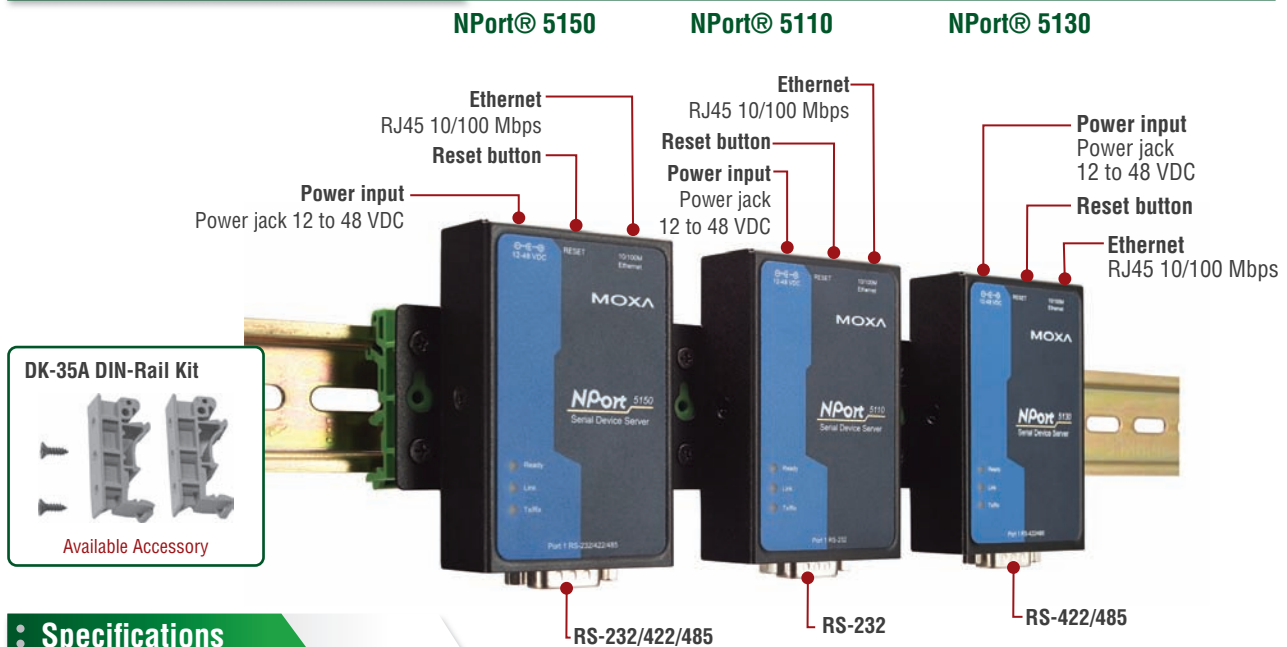
seamlessly over a TCP/IP network. Using Moxa's Real COM/TTY drivers is an excellent way to preserve your software investment, while still allowing you to enjoy the benefits of networking your serial devices.

Easy to Troubleshoot

NPort® 5100 device servers support SNMP V2, which can be used to monitor all units over Ethernet. Each unit can be configured to send trap messages automatically to the SNMP manager when user-defined errors are encountered. For users who do not use SNMP manager, an

e-mail alert can be sent instead. Users can define the trigger for the alerts using Moxa's Windows utility, or the web console. For example, alerts can be triggered by a warm start, a cold start, or a change in password.

Appearance



Specifications

Ethernet Interface

Number of Ports: 1
Speed: 10/100 Mbps
Connector: 8-pin RJ45
Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 1
Serial Standards:
 NPort® 5110: RS-232
 NPort® 5130: RS-422/485
 NPort® 5150: RS-232/422/485

Connector: DB9 male

Serial Line Protection: 15 KV ESD protection for all signals

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8
Stop Bits: 1, 1.5, 2
Parity: None, Even, Odd, Space, Mark
Flow Control: RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF
Baudrate:
 NPort® 5110: 110 bps to 230.4 Kbps
 NPort® 5130/5150: 50 bps to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422: Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP
Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Physical Characteristics

Housing: Aluminum (1 mm)
Weight: 580 g
Dimensions:
 Without ears: 52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)
 With ears: 75.2 x 80 x 22 mm (2.96 x 3.15 x 0.87 in)

Environmental Limits

Operating Temperature:
 NPort® 5110/5130/5150: 0 to 55°C (32 to 131°F)
 NPort® 5110-T: -40 to 75°C (-40 to 167°F)
Operating Humidity: 5 to 95% RH
Storage Temperature: -20 to 85°C (-4 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC
Power Consumption:
 NPort® 5110: 128.7 mA @ 12 V, 72 mA @ 24 V
 NPort® 5130/5150: 200 mA @ 12 V, 106 mA @ 24 V
Power Line Protection: 1 KV burst (EN61000-4-4: EFT/B), 0.5 KV surge (EN61000-4-5)

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
Safety: UL (UL60950-1), CUL, TÜV (EN60950-1)

Reliability

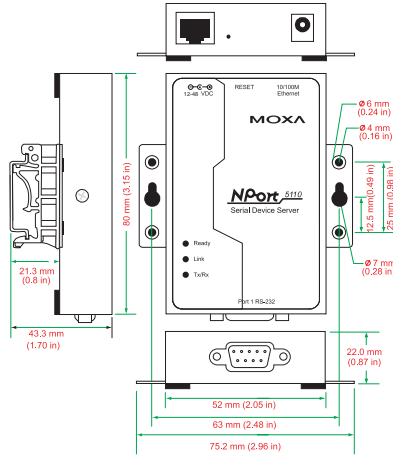
Automatic Reboot Trigger: Built-in WDT (watchdog timer)
MTBF (mean time between failures):
 NPort® 5110: 279122 hrs
 NPort® 5130: 246505 hrs
 NPort® 5150: 246034 hrs

Warranty

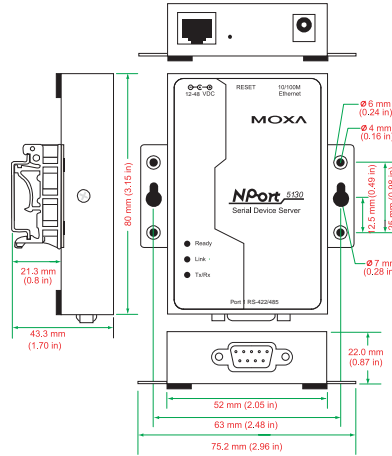
Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

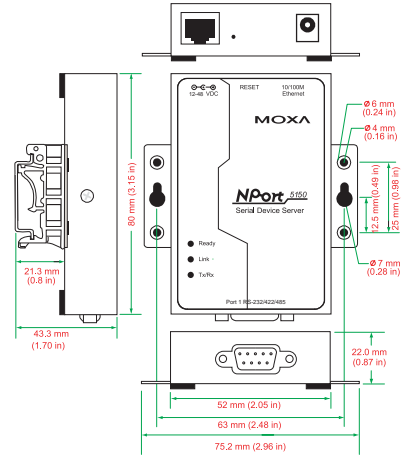
NPort® 5110



NPort® 5130

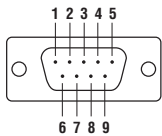


NPort® 5150



Pin Assignment

DB9 male connector



NPort® 5110 (RS-232)

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

NPort® 5130 (RS-422/485)

PIN	RS-422/485-4w	RS-485-2w
1	TxD-(A)	—
2	TxD+(B)	—
3	RxD+(B)	Data+(B)
4	RxD-(A)	Data-(A)
5	GND	GND
6	—	—
7	—	—
8	—	—
9	—	—

NPort® 5150 (RS-232/422/485)

PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	TxD-(A)	—
2	RxD	TxD+(B)	—
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—
9	—	—	—

Ordering Information

Available Models

- NPort® 5110:** 1-port RS-232 device server
- NPort® 5130:** 1-port RS-422/485 device server
- NPort® 5150:** 1-port RS-232/422/485 device server
- NPort® 5110-T:** 1-port RS-232 device server, wide temperature (-40 to 75°C)

Optional Accessories (can be purchased separately)

DK-35A: Mounting Kit for 35-mm DIN-Rail

Package Checklist

- NPort® 5100 series device server
- Power Adaptor (see Appendix A)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NPort® 5200 Series

2-port RS-232/422/485 serial device servers



- > Small size for easy installation
- > Versatile socket operation modes, including TCP Server, TCP Client, and UDP
- > Easy-to-use Windows utility for configuring multiple device servers
- > Supports 10/100M Ethernet
- > Patented ADDC® (Automatic Data Direction Control) for 2-wire and 4-wire RS-485
- > Built-in 15 KV ESD protection for all serial signals
- > SNMP MIB-II for network management

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



8

Serial Device Servers > NPort® 5200 Series

Standard TCP/IP Protocols and Choice of Operation Modes

NPort® 5200 device servers can operate in TCP Server, TCP Client, or UDP operation mode, ensuring compatibility with software based on a

standard network API (Winsock, BSD Sockets).

Real COM/TTY Drivers for Existing Software

With the Real COM/TTY drivers that are provided with each NPort®, software designed for communication with COM/TTY ports can be instantly and seamlessly integrated into a TCP/IP network. This is an

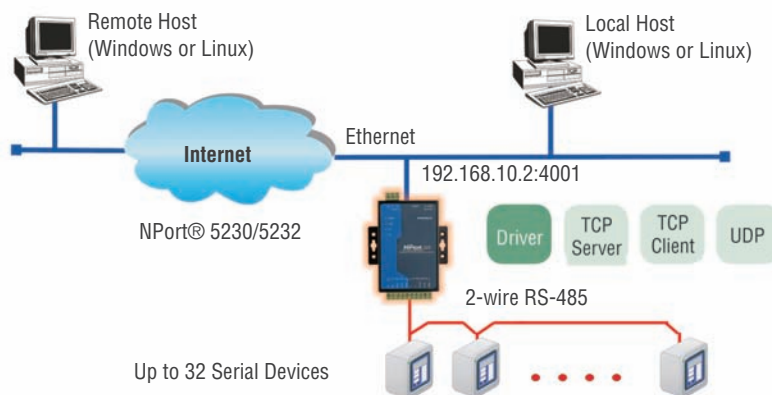
excellent “no fuss” way to preserve your software investment and enjoy the benefits of networking your serial devices.

Control Remote Serial Devices with TCP/IP or Traditional COM/TTY Port

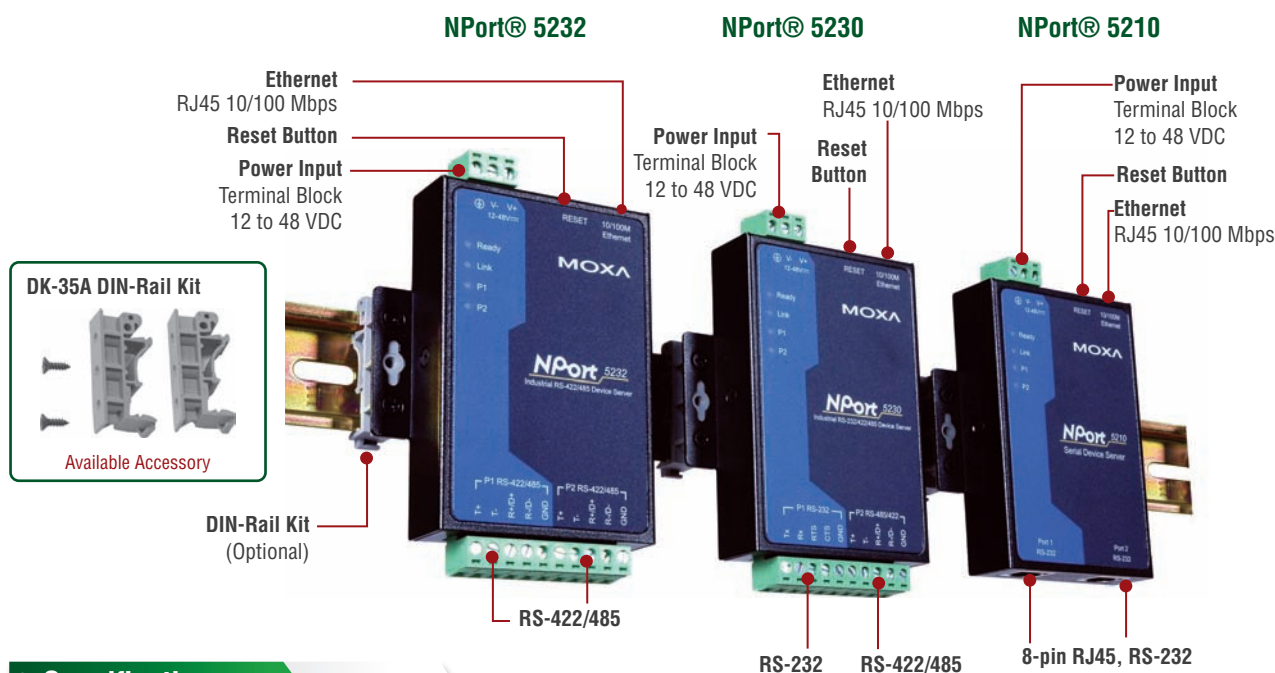
By specifying the NPort® 5200's IP address and port number, a network sockets API can obtain access to the attached serial device over the network, from any host computer that supports TCP/IP. For

legacy Windows or Linux software that is COM or TTY-based, Moxa's COM/TTY drivers provide a seamless way of operating over the network.

COM Driver or Network Socket Operation



Appearance



Specifications

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 2

Serial Standards:

NPort® 5210: RS-232

NPort® 5230: 1 RS-232 port, 1 RS-422/485 port

NPort® 5232: RS-422/485

Connectors:

NPort® 5210: RJ45 (8 pins)

NPort® 5230/5232: Terminal Block (5 pins per port)

Serial Line Protection:

15 KV ESD protection

2 KV isolation protection (NPort® 5232I/5232I-T)

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS (RS-232 only), DTR/DSR (NPort® 5210 only), XON/XOFF

Baudrate: 110 bps to 230.4 Kbps

Serial Signals

RS-232:

NPort® 5210: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

NPort® 5230/5232: TxD, RxD, RTS, CTS, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND

RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTF

Configuration Options: Web Console, Serial Console (NPort® 5210/5230 only), Telnet Console, Windows Utility (NPort® 5210/5230 only)

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Physical Characteristics

Housing: Aluminum (1 mm), providing IP30 protection

Weight:

NPort® 5210: 320 g

NPort® 5230/5232: 340 g

NPort® 5232I: 380 g

Dimensions:

NPort® 5210/5230/5232:

Without ears: 67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)

With ears: 90 x 100.4 x 22 mm (3.54 x 3.95 x 0.87 in)

NPort® 5232I:

Without ears: 67 x 100.4 x 35 mm (2.64 x 3.95 x 1.37 in)

With ears: 90 x 100.4 x 35 mm (3.54 x 3.95 x 1.37 in)

Environmental Limits

Operating Temperature:

NPort® 5210/5230/5232/5232I: 0 to 55°C (32 to 131°F)

NPort® 5210-T/5230-T/5232-T/5232I-T: -40 to 75°C (-40 to 167°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 85°C (-4 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort® 5210: 305 mA @ 12 V max.

NPort® 5230: 347.1 mA @ 12 V max.

NPort® 5232: 259.6 mA @ 12 V max.

NPort® 5232I: 509.4 mA @ 12 V max.

Power Line Protection: 1 KV burst (EN61000-4-4: EFT/B), 0.5 KV surge (EN61000-4-5)

Regulatory Approvals

EMC: CE (EN55022 and EN55024 Class A), FCC Part 15 Subpart B Class A

Safety: UL (UL60950-1), TÜV (EN60950-1)

Medical: EN60601-1-2 Class B, EN55011

Marine: DNV

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures):

NPort® 5210: 134850 hrs

NPort® 5230: 106955 hrs

NPort® 5232: 102344 hrs

NPort® 5232I: 87083 hrs

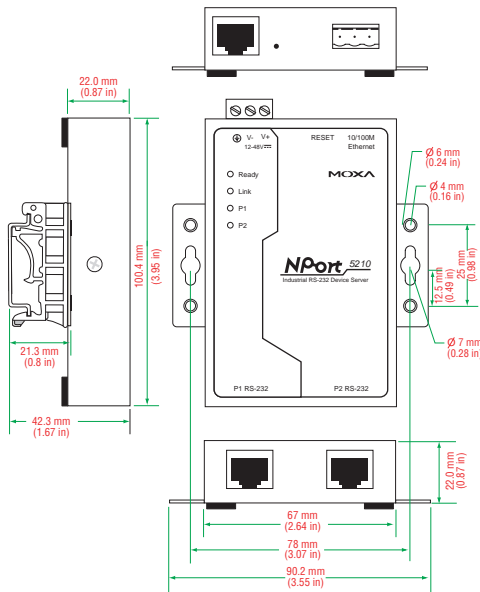
Warranty

Warranty Period: 5 years

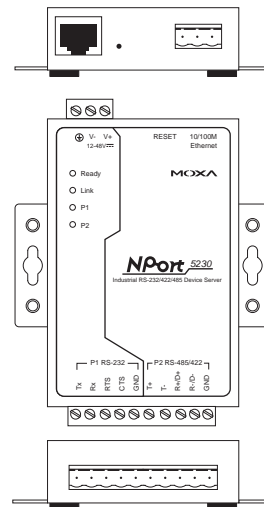
Details: See www.moxa.com/warranty

Dimensions

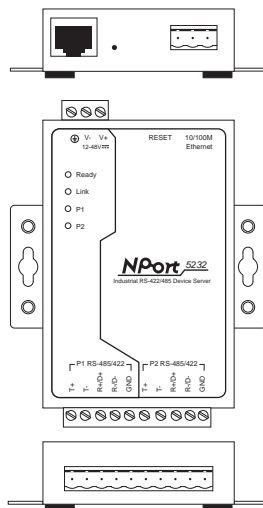
NPort® 5210



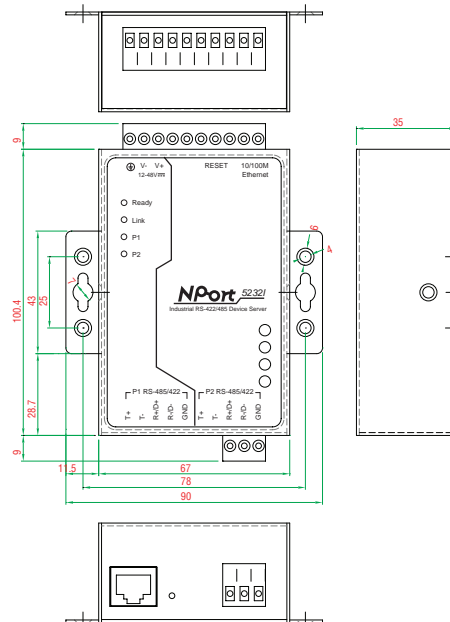
NPort® 5230



NPort® 5232

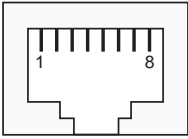


NPort® 5232I



Pin Assignment

8-pin RJ45 connector



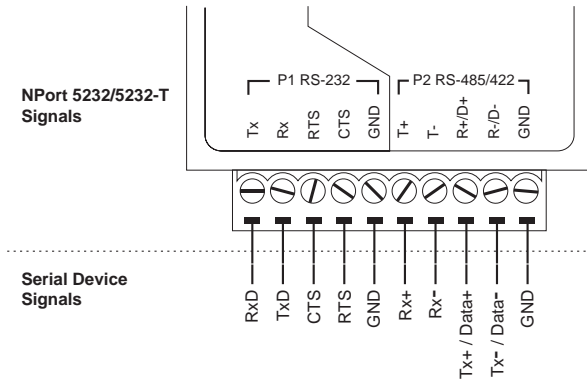
NPort® 5210/5210-T (RS-232)

PIN	RS-232
1	DSR (in)
2	RTS (out)
3	GND
4	TxD (out)

PIN	RS-232
5	RxD (in)
6	DCD (in)
7	CTS (in)
8	DTR (out)

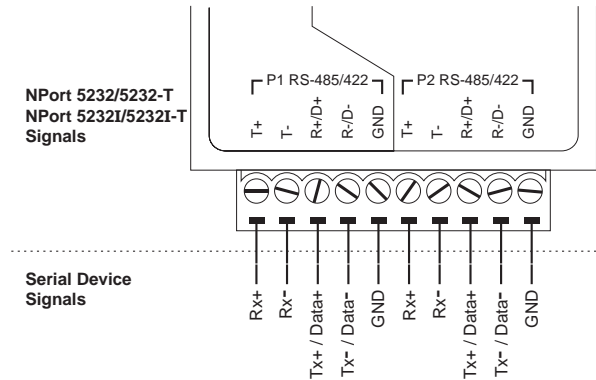
NPort® 5230/5230-T

(RS-232/422/485, terminal block connector)



NPort® 5232/5232I/5232-T/5232I-T

(RS-422/485, terminal block connector)



: Ordering Information

Available Models

NPort® 5210: 2-port RS-232 device server

NPort® 5230: 2-port device server with 1 RS-232 port and 1 RS-422/485 port

NPort® 5232: 2-port RS-422/485 device server

NPort® 5232I: 2-port RS-422/485 device server with 2 KV optical isolation

NPort® 5210-T: 2-port RS-232 device server, wide temperature (-40 to 75°C)

NPort® 5230-T: 2-port device server with 1 RS-232 port and 1 RS-422/485 port, wide temperature (-40 to 75°C)

NPort® 5232-T: 2-port RS-422/485 device server, wide temperature (-40 to 75°C)

NPort® 5232I-T: 2-port RS-422/485 device server with 2 KV optical isolation, wide temperature (-40 to 75°C)

Package Checklist

- NPort® 5200 series device server
- Power Jack to 3-pin Terminal Block Adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

Optional Accessories (can be purchased separately)

DK-35A: Mounting Kit for 35-mm DIN-Rail

DIN-Rail Power Supply: See page A-8 for details

Terminal Block: See page A-7 for details

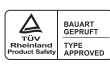
NPort® 5400 Series

4-port RS-232/422/485 serial device servers



- > Easy IP address configuration with LCD panel
- > 10/100M auto-sensing Ethernet
- > 4 serial ports, with support for RS-232, RS-422, and RS-485
- > Built-in 15 KV ESD surge protection for all serial signals
- > Versatile socket operation modes, including TCP Server, TCP Client, and UDP
- > Choice of configuration methods: Web console, Telnet console, and Windows utility
- > SNMP MIB-II for network management
- > 2 KV isolation protection for NPort® 5430I

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



8

Serial Device Servers > NPort® 5400 Series

: Network Readiness for up to Four Serial Devices

NPort® 5400 device servers can conveniently and transparently connect up to four serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. Data transmission between the serial and Ethernet interfaces is

bi-directional. By using NPort® device servers, you not only protect your current hardware investment, but also allow for future network expansion. You can both centralize the management of your serial devices, and distribute management hosts over the network.

: Independent Operation Mode for each Serial Port

NPort® 5400 device servers can be used to connect different devices for remote data polling, event handling, or data multicasting over a TCP/IP network. Each serial port on the NPort® 5400 operates

independently to provide maximum versatility. For example, port 1 can operate in Driver mode, port 2 in TCP Server mode, and ports 3 and 4 in TCP Client mode.

: User-friendly LCD Panel for Easy Installation

An LCD panel is built into the NPort® 5400's top panel, with four buttons for inputting data, configuration, and selecting the operation mode. The LCD panel displays the server name, serial number, and IP address, and can be used to enter or modify parameters such as IP address, netmask, and gateway.



: Redundant DC Power Inputs

NPort® 5400 device servers support redundant power sources and provide both a DC terminal block input and a DC power jack input. The two power inputs not only provide power redundancy, but also allow greater flexibility for use with different applications.

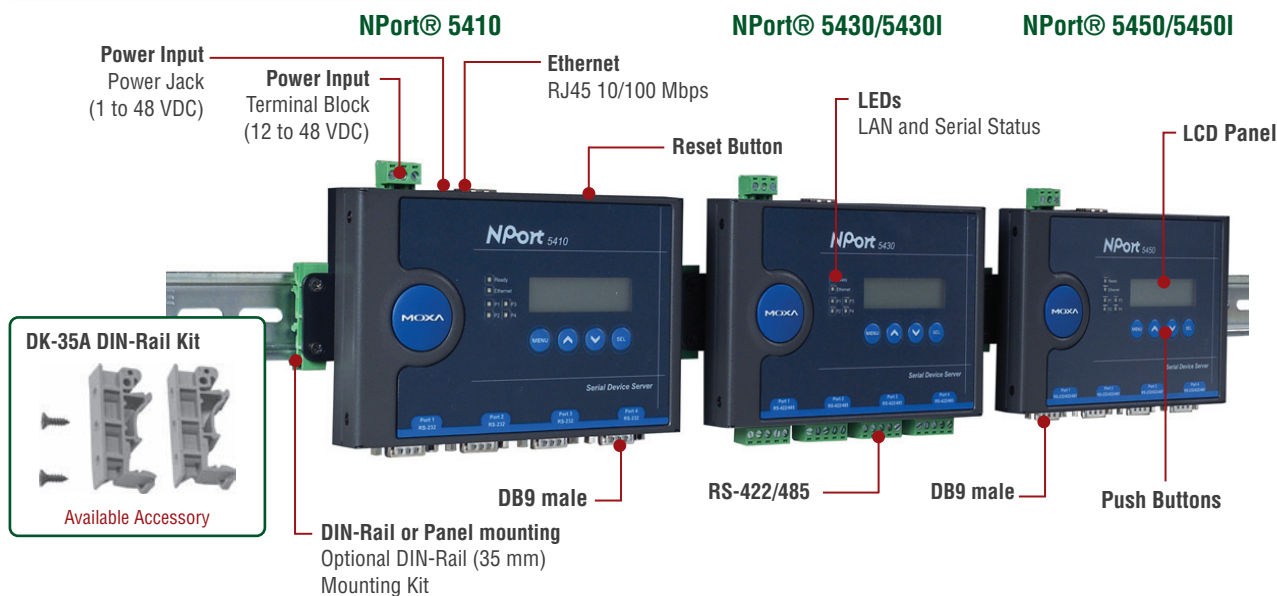


: Adjustable Termination and pull High/Low Resistors

Termination resistors may be needed in some critical environments to prevent the reflection of serial signals. When using termination resistors, it is important to set the pull high/low resistors correctly to prevent the electrical signal from being corrupted. Since no set of resistor values is universally compatible with all environments, the NPort® 5400 has four sets of DIP switches on the bottom panel to set the termination and pull high/low resistor values.



Appearance



Specifications

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 4

Serial Standards:

NPort® 5410: RS-232

NPort® 5430: RS-422/485

NPort® 5450: RS-232/422/485

Connectors:

NPort® 5410/5450: DB9 male

NPort® 5430: Terminal block

Serial Line Protection:

15 KV ESD protection for all signals

2 KV isolation protection (NPort® 5430I/5450I)

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: DSR/DTR (RS-232 only), RTS/CTS, XON/XOFF

Baudrate: 50 bps to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND

RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTIP, Rtelnet, ARP

Configuration Options: Web Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case

Push Buttons: Four push buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm), providing IP30 protection

Weight: 740 g

Dimensions:

Without mounting kit: 158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)

With mounting kit: 176 x 103 x 33 mm (6.93 x 4.06 x 1.30 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort® 5410/5430: 350 mA @ 12 V max.

NPort® 5430I: 585 mA @ 12 V max.

NPort® 5450: 350 mA @ 12 V max.

NPort® 5450I: 554 mA @ 12 V max.

Power Line Protection: 4 KV burst (EN61000-4-4: EFT/B), 2 KV surge (EN61000-4-5)

Regulatory Approvals

EMC: CE (EN55022 and EN55024 Class A), FCC Part 15 Subpart B Class A

Safety: UL (UL60950-1), CUL, TÜV (EN60950-1)

Medical: EN60601-1-2 Class B, EN55011

Marine: DNV

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

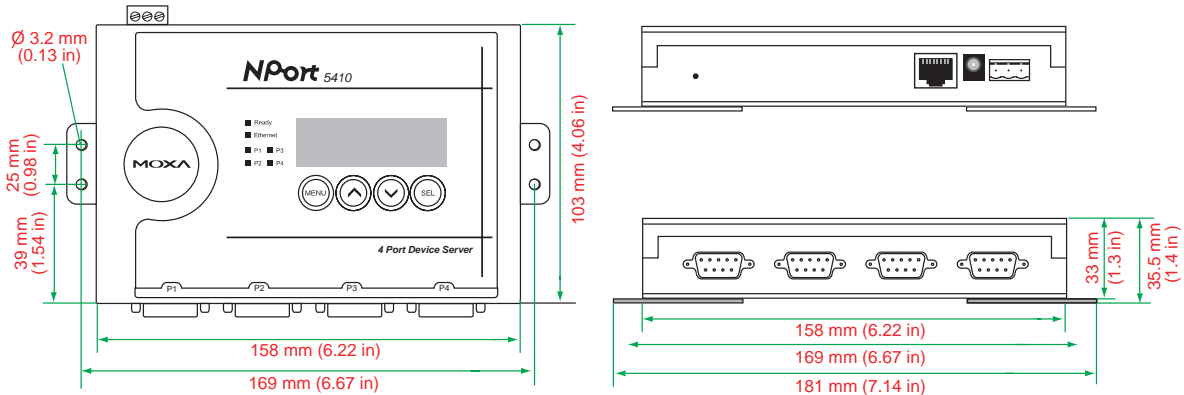
MTBF (mean time between failures):

NPort® 5410: 205153 hrs

NPort® 5430: 201699 hrs

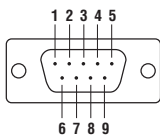
NPort® 5430I: 114540 hrs

Dimensions



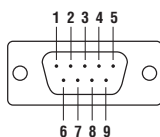
Pin Assignment

NPort® 5410
(RS-232, DB9 male connector)



PIN	RS-232
1	DCD
2	RxD
3	RxD
4	DTR
5	GND
6	DSR
7	TRS
8	CTS
9	-

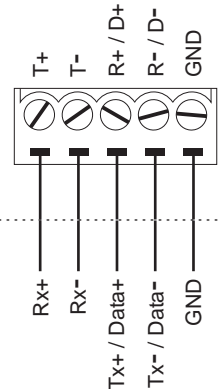
NPort® 5450/5450I (RS-232/422/485, DB9 male connector)
(RS-232/422/485, DB9 male connector)



PIN	RS-232	RS-422/RS-485-4w	RS-485-2w
1	DCD	TxD-(A)	---
2	RxD	TxD+(B)	---
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	---	---
7	RTS	---	---
8	CTS	---	---
9	---	---	---

NPort® 5430/5430I
(RS-422/485, terminal block connector)

NPort 5430/5430I
Terminal Block



Serial Device
Signals

: Ordering Information

Available Models

NPort® 5410: 4-port RS-232 device server

NPort® 5430: 4-port RS-422/485 device server

NPort® 5430I: 4-port RS-422/485 device server with 2 KV optical isolation

NPort® 5450: 4-port RS-232/422/485 device server

NPort® 5450I: 4-port RS-232/422/485 device server with 2 KV optical isolation

Optional Accessories (can be purchased separately)

DK-35A: Mounting Kit for 35-mm DIN-Rail

DIN-Rail Power Supply: See page A-8 for details

Terminal Block: See page A-7 for details

Power Adaptor: See page A-9 for details

Package Checklist

- NPort® 5400 series device server
- Power Jack to 3-pin Terminal Block Adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NPort® 5600 Rackmount Series

8 and 16-port RS-232/422/485 serial device servers



- > 8 or 16 serial ports supporting RS-232/422/485
- > Standard 19-inch rackmount size
- > 10/100M auto-sensing Ethernet
- > Built-in 15 KV ESD protection for all serial signals
- > Easy IP address configuration with LCD panel
- > Choice of configuration methods: Web console, Telnet console, and Windows utility
- > Versatile socket operation modes, including TCP Server, TCP Client, UDP, and Real COM
- > SNMP MIB-II for network management

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



: Network Readiness for up to Sixteen Serial Devices

NPort® 5600 rackmount device servers can conveniently and transparently connect up to sixteen serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. Data transmission between the serial and Ethernet

interfaces is bi-directional. By using NPort® device servers, you not only protect your current hardware investment, but also allow for future network expansion. You can both centralize the management of your serial devices, and distribute management hosts over the network.

: 19-inch Rackmount Device Server

NPort® 5600 device servers come with Tx/Rx LEDs for the serial ports on the front panel, and the 8 or 16 RJ45 serial port connectors on the rear panel. This makes the NPort® 5600 device servers suitable for

standard 19-inch rack mounting, allowing you to simplify operation, maintenance, and administrative tasks.

: Real COM/TTY Ports

Real COM/TTY drivers are provided that make the serial ports on the NPort® 5600 recognizable as Real COM ports by Windows, or Real TTY ports by Linux. In addition to supporting basic data transmission

and reception, the NPort® drivers also support the RTS, CTS, DTR, DSR, and DCD control signals.

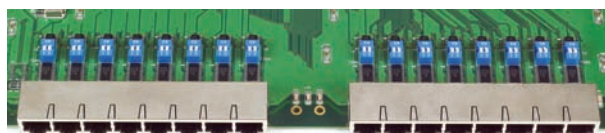
: LED Indicators to Ease Your Maintenance Tasks

The System LED, Serial Tx/Rx LEDs, and Ethernet LEDs (located on the RJ45 connector) provide a great tool for basic maintenance tasks and help engineers analyze problems in the field. The NPort® 5600's LEDs

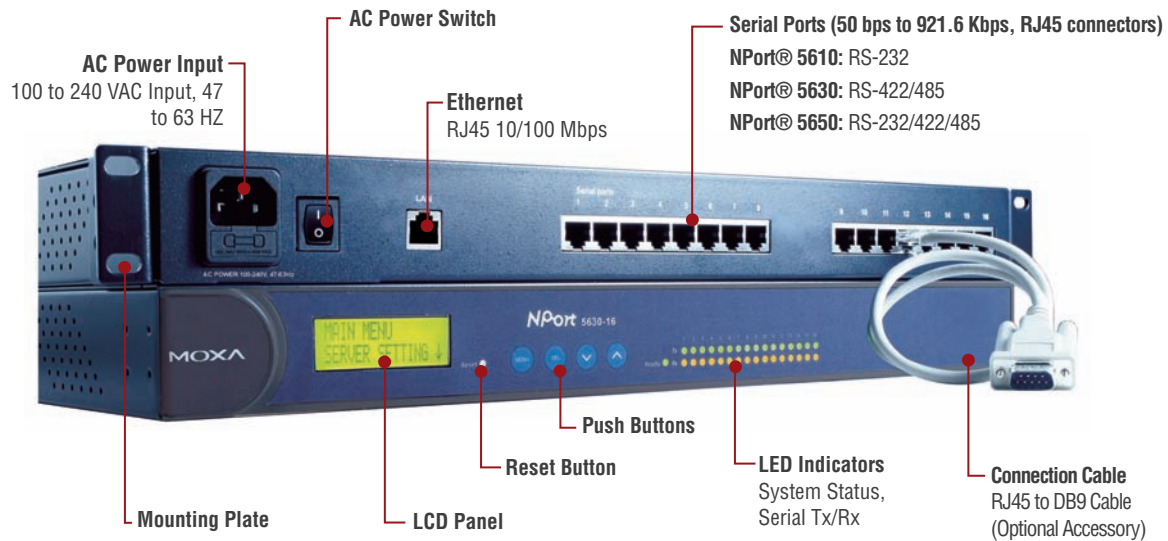
not only indicate current system and network status, but also help field engineers monitor the status of attached serial devices.

: Adjustable Termination and Pull High/Low Resistors

In some critical environments, termination resistors may be needed to prevent the reflection of serial signals. When using termination resistors, it is also important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor values is universally compatible for all environments, the NPort® 5600 has DIP switches on the bottom panel for setting the termination and pull high/low resistor values.



: Appearance



: Specifications

Ethernet Interface

Number of Ports: 1
Speed: 10/100 Mbps
Connector: 8-pin RJ45
Magnetic Isolation Protection: 1.5 KV built-in

Optical Fiber Interface

Distance:
 Multi mode: 0 to 2 km, 1310 nm (62.5/125 μ m, 500 MHz*km)
 Single mode: 0 to 40 km, 1310 nm (9/125 μ m, 3.5 PS/(nm*km))
Min. TX Output: -20 dBm (Multi mode), -5 dBm (Single mode)
Max. TX Output: -14 dBm (Multi mode), 0 dBm (Single mode)
Sensitivity: -34 to -30 dBm (Multi mode), -36 to -32 dBm (Single mode)

Serial Interface

Number of Ports: 8 or 16
Serial Standards:
 NPort® 5610: RS-232
 NPort® 5630: RS-422/485
 NPort® 5650: RS-232/422/485
Connectors: RJ45 (8 pins)
Serial Line Protection:
 15 KV ESD protection for all signals
RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8
Stop Bits: 1, 1.5, 2
Parity: None, Even, Odd, Space, Mark
Flow Control: DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF
Baudrate: 50 bps to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422: Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTP, ARP, PPP, SLIP, RTelnet, RFC2217

Configuration Options: Web Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case
Push Buttons: Four push buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm), providing IP30 protection

Weight:

NPort® 5610-8: 3340 g
 NPort® 5610-8-48V: 3160 g
 NPort® 5630-8: 3380 g
 NPort® 5650-8: 3360 g
 NPort® 5650-8-S-SC: 3380 g
 NPort® 5650-8-M-SC: 3380 g
 NPort® 5610-16: 3420 g
 NPort® 5610-16-48V: 3260 g
 NPort® 5630-16: 3400 g
 NPort® 5650-16: 3460 g
 NPort® 5650-16-S-SC: 3440 g
 NPort® 5650-16-M-SC: 3440 g

Dimensions:

Without ears: 440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
 With ears: 480 x 45 x 198 mm (18.90 x 1.77 x 7.80 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 75°C (-4 to 167°F)

Power Requirements

Input Voltage:

NPort® 5610/5630/5650: 100 to 240 VAC, 47 to 63 hz
 NPort® 5610-48V: ±48 VDC (20 to 72 VDC, -20 to -72 VDC)

Power Consumption:

NPort® 5610-8/16: 141 mA @ 100 VAC, 93 mA @ 240 VAC
 NPort® 5630-8/16: 152 mA @ 100 VAC, 98 mA @ 240 VAC
 NPort® 5610-8/16-48V: 135 mA @ 48 VDC
 NPort® 5650-8/16: 158 mA @ 100 VAC, 102 mA @ 240 VAC
 NPort® 5650-8/16-S-SC: 164 mA @ 100 VAC, 110 mA @ 240 VAC
 NPort® 5650-8/16-M-SC: 174 mA @ 100 VAC, 113 mA @ 240 VAC

Power Line Protection: 4 KV burst (EN61000-4-4: EFT/B), 2 KV surge (EN61000-4-5)

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A

NPort® 5610 only: IEC61000-4-12

Safety: UL (UL60950-1), TÜV (EN60950-1)

Medical: EN60601-1-2 Class B, EN55011

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures):

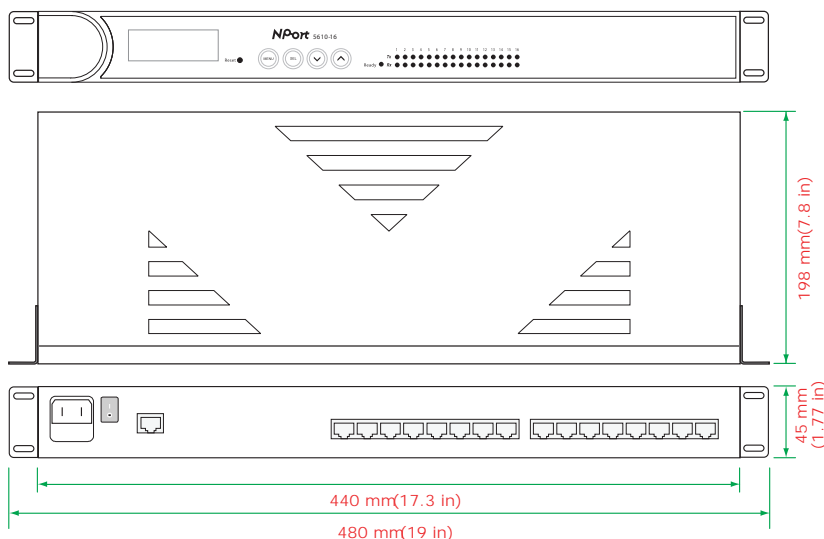
NPort® 5610-8: 97294 hrs
 NPort® 5610-16: 94928 hrs
 NPort® 5610-8-48V: 96758 hrs
 NPort® 5610-16-48V: 94417 hrs
 NPort® 5630-8: 118405 hrs
 NPort® 5630-16: 91483 hrs
 NPort® 5650-8: 117584 hrs
 NPort® 5650-16: 104767 hrs
 NPort® 5650-S-SC-8: 116914 hrs
 NPort® 5650-S-SC-16: 87528 hrs
 NPort® 5650-M-SC-8: 116914 hrs
 NPort® 5650-M-SC-16: 87528 hrs

Warranty

Warranty Period: 5 years

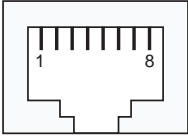
Details: See www.moxa.com/warranty

Dimensions



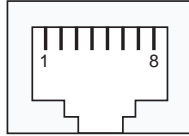
Pin Assignment

NPort® 5610
(RS-232, 8-port RJ45 connector)



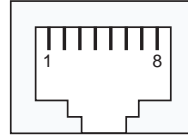
PIN	RS-232
1	DSR
2	RTS
3	GND
4	TXD
5	RxD
6	DCD
7	CTS
8	DTR

NPort® 5630
(RS-422/485, 8-port RJ45 connector)



PIN	RS-422/485-4w	RS-485-2w
1	---	---
2	---	---
3	TxD+	---
4	TxD-	---
5	RxD-	Data+
6	RxD+	Data-
7	GND	GND
8	---	---

NPort® 5650
(RS-232/422/485, 8-port RJ45 connector)



PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TXD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

: Ordering Information

Available Models

NPort® 5610-8: 8-port RS-232 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5610-8-48V: 8-port RS-232 rackmount device server with RJ45 connectors and 48 VDC power input

NPort® 5630-8: 8-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5650-8: 8-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5650-8-M-SC: 8-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) multi-mode fiber (SC connector)

NPort® 5650-8-S-SC: 8-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) single-mode fiber (SC connector)

NPort® 5610-16: 16-port RS-232 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5610-16-48V: 16-port RS-232 rackmount device server with RJ45 connectors and 48 VDC power input

NPort® 5630-16: 16-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5650-16: 16-port RS-422/485 rackmount device server with RJ45 connectors and 100-240 VAC power input

NPort® 5650-16-M-SC: 16-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) multi-mode fiber (SC connector)

NPort® 5650-16-S-SC: 16-port RS-232/422/485 rackmount device server with RJ45 connectors and 10/100BaseF(X) single-mode fiber (SC connector)

Optional Accessories (can be purchased separately)

CBL-RJ45F25-150: 8-pin RJ45 to DB25 female cable, 150 cm

CBL-RJ45M25-150: 8-pin RJ45 to DB25 male cable, 150 cm

CBL-RJ45F9-150: 8-pin RJ45 to DB9 female cable, 150 cm

CBL-RJ45M9-150: 8-pin RJ45 to DB9 male cable, 150 cm

Package Checklist

- NPort® 5600 series device server
- Power Cord (see Appendix A)
- Serial cable for configuration
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NPort® 5600 Desktop Series

8-port RS-232/422/485 serial device servers



- > 8 serial ports supporting RS-232/422/485
- > Compact desktop design
- > 10/100M auto-detecting Ethernet
- > Built-in 15 KV ESD protection for all serial signals
- > Easy IP address configuration with LCD panel
- > Choice of configuration methods: Web console, Telnet console, and Windows utility
- > Versatile socket operation modes, including TCP Server, TCP Client, UDP, and Real COM
- > SNMP MIB-II for network management
- > Built-in recorder: Use your own voice as the alert when exceptions occur

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



: Introduction

NPort® 5600-8-DT device servers can conveniently and transparently connect 8 serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. You can both centralize management of your serial devices and distribute management hosts over the network.

Since the NPort® 5600-8-DT device servers have a smaller form factor compared to our 19" models, they are a great choice for applications that need additional serial ports, but for which mounting rails are not available.

: Convenient Design for RS-485 Applications

The NPort® 5650-8-DT device servers support selectable 1K-ohm and 150K-ohm pull high/low resistors and a 120-ohm terminator. In some critical environments, termination resistors may be needed to prevent the reflection of serial signals. When using termination resistors, it

is also important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. Since no set of resistor values is universally compatible with all environments, NPort® 5600-8-DT device servers use DIP switches to allow users to adjust termination and pull high/low resistor values manually for each serial port.

: Convenient Power Inputs

The NPort® 5650-8-DT device servers support both a power terminal block and power jack for ease of use and greater flexibility. Users can

connect the terminal block directly to a DC power source, or use the power jack to connect to an AC circuit through an adaptor.

: LED Indicators to Ease Your Maintenance Tasks

The System LED, Serial Tx/Rx LEDs, and Ethernet LEDs (located on the RJ45 connector) provide a great tool for basic maintenance tasks and help engineers analyze problems in the field. The NPort® 5600's LEDs

not only indicate current system and network status, but also help field engineers monitor the status of attached serial devices.

: Two Ethernet Ports for Convenient Cascade-style Wiring

The NPort® 5600-8-DT device servers come with two Ethernet ports that can be used as Ethernet switch ports. Connect one port to the network or server, and the other port to another Ethernet device. The

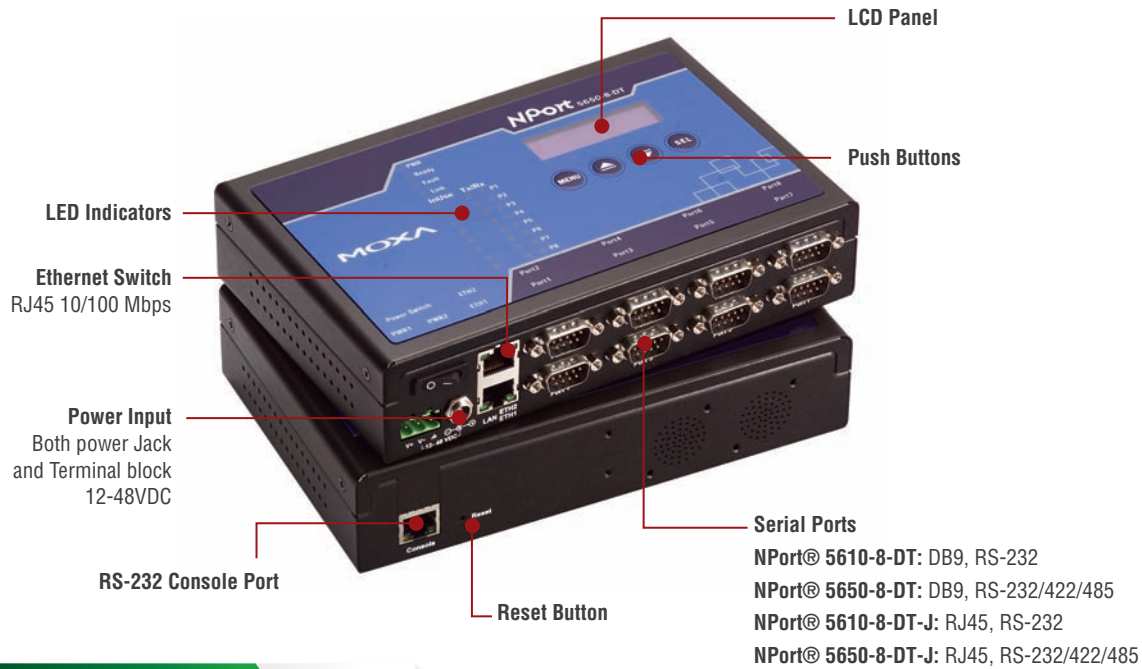
dual Ethernet ports eliminate the need to connect each device to a separate Ethernet switch, reducing wiring costs.

: Automatic Warning Function by Speaker and/or E-mail

The built-in speakers can be used to alert administrators of problems with the Ethernet links or power input. The web console indicates which Ethernet link or power input has failed. An e-mail warning can

also be issued when an exception is detected. These functions are valuable tools that enable maintenance engineers to react promptly to emergency situations.

: Appearance



: Specifications

Ethernet Interface

Number of Ports: 2
Speed: 10/100 Mbps
Connector: 8-pin RJ45
Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 8
Serial Standards:
 NPort® 5610-8-DT: RS-232
 NPort® 5650-8-DT: RS-232/422/485
Connectors:
 NPort® 5610-8-DT/5650-8-DT/5650I-8-DT: DB9 male
 NPort® 5610-8-DT-J/5650-8-DT-J: RJ45 (8 pins)
Serial Line Protection:
 15 KV ESD protection for all signals
 2 KV isolation protection (NPort® 5650I-8-DT only)
RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8
Stop Bits: 1, 1.5, 2
Parity: None, Even, Odd, Space, Mark
Flow Control: DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF
Baudrate: 50 bps to 921.6 Kbps

Serial Signals

RS-232: Tx+, Tx-, Rx+, Rx-, GND
RS-422: Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNT, Rtelnet, ARP, RFC2217
Configuration Options: Web Console, Telnet Console, Windows Utility
Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case

Push Buttons: Four push buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (0.8 mm), providing IP30 protection

Weight:

NPort® 5610-8-DT: 1760 g

NPort® 5610-8-DT-J: 1170 g

NPort® 5650-8-DT: 1770 g

NPort® 5650-8-DT-J: 1710 g

NPort® 5650I-8-DT: 1850 g

Dimensions:

Without ears: 197 x 44 x 135.5 mm (7.76 x 1.73 x 5.33 in)

With ears: 229 x 46 x 135.5 mm (9.01 x 1.81 x 5.33 in)

With DIN-Rail kit on bottom panel: 197 x 53 x 135.5 mm (7.76 x 2.09 x 5.33 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort® 5610-8-DT: 621 mA @ 12 V, 140 mA @ 48 V

NPort® 5610-8-DT-J: 621 mA @ 12 V, 140 mA @ 48 V

NPort® 5650-8-DT: 580 mA @ 12 V, 156 mA @ 48 V

NPort® 5650I-8-DT: 1066 mA @ 12 V, 200 mA @ 48 V

NPort® 5650-8-DT-J: 580 mA @ 12 V, 156 mA @ 48 V

Regulatory Approvals

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A

Safety: UL (UL60950-1), TÜV (EN60950-1)

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

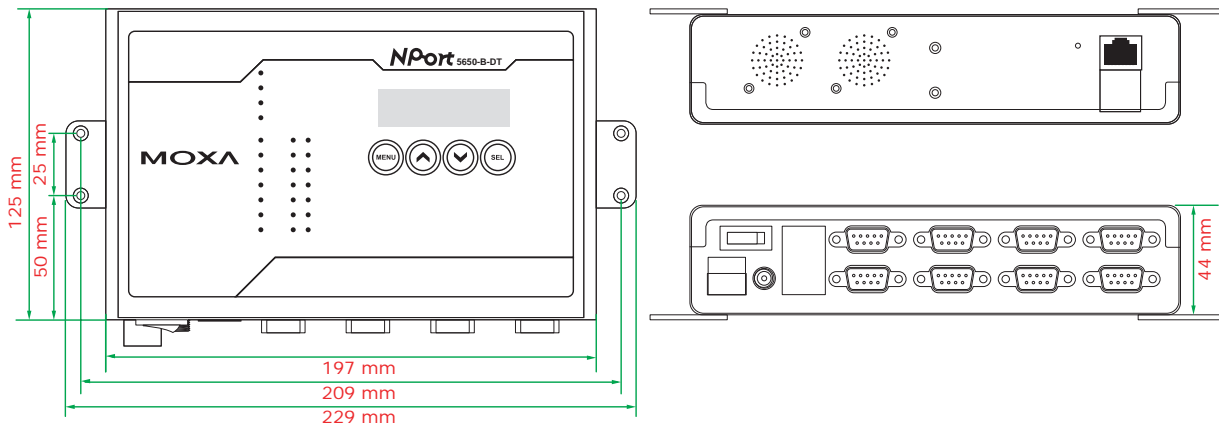
Automatic Reboot Trigger: Built-in WDT (watchdog timer)

Warranty

Warranty Period: 5 years

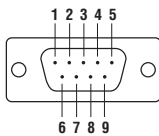
Details: See www.moxa.com/warranty

Dimensions



Pin Assignment

DB9 male connector



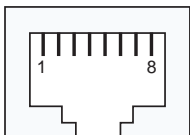
NPort® 5610-8-DT (RS-232)

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

NPort® 5650-8-DT/5650I-8-DT (RS-232/422/485)

PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	TxD-(A)	—
2	RxD	TxD+(B)	—
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—

8-pin RJ45 connector



NPort® 5610-8-DT-J (RS-232)

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

NPort® 5650-8-DT-J (RS-232/422/485)

PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TxD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

: Ordering Information

Available Models

NPort® 5610-8-DT: 8-port RS-232 desktop device server with DB9 male connectors and 48 VDC power input

NPort® 5610-8-DT-J: 8-port RS-232 desktop device server with RJ45 connectors and 48 VDC power input

NPort® 5650-8-DT: 8-port RS-232/422/485 desktop device server with DB9 male connectors and 48 VDC power input

NPort® 5650I-8-DT: 8-port RS-232/422/485 desktop device server with DB9 male connectors, 48 VDC power input, and 2 KV optical isolation

NPort® 5650-8-DT-J: 8-port RS-232/422/485 desktop device server with RJ45 connectors and 48 VDC power input

Optional Accessories (can be purchased separately)

CBL-RJ45F25-150: 8-pin RJ45 to DB25 female cable, 150 cm

CBL-RJ45M25-150: 8-pin RJ45 to DB25 male cable, 150 cm

CBL-RJ45F9-150: 8-pin RJ45 to DB9 female cable, 150 cm

CBL-RJ45M9-150: 8-pin RJ45 to DB9 male cable, 150 cm

Package Checklist

- NPort® 5600 series device server
- Power Adaptor (see Appendix A)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NPort® IA5000 Series

1 and 2-port serial device servers for industrial automation



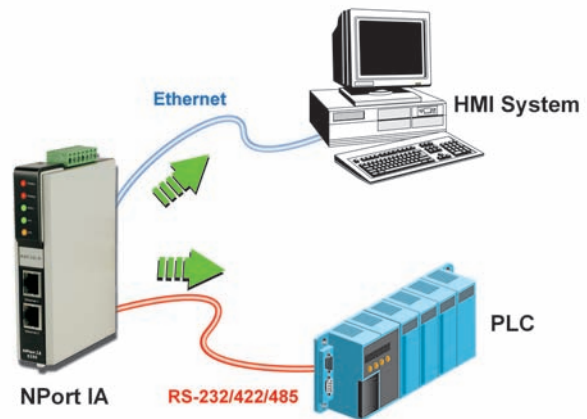
- > Versatile socket operation modes, including TCP Server, TCP Client, UDP
- > Patented ADDC® (automatic data direction control) for 2-wire and 4-wire RS-485
- > Cascading Ethernet ports for easy wiring (applies only to RJ45 connectors)
- > Redundant DC power inputs
- > Warning by relay output and e-mail
- > 10/100BaseTX (RJ45) or 100BaseFX (single mode or multi-mode with SC connector)
- > IP30-rated housing

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



Overview

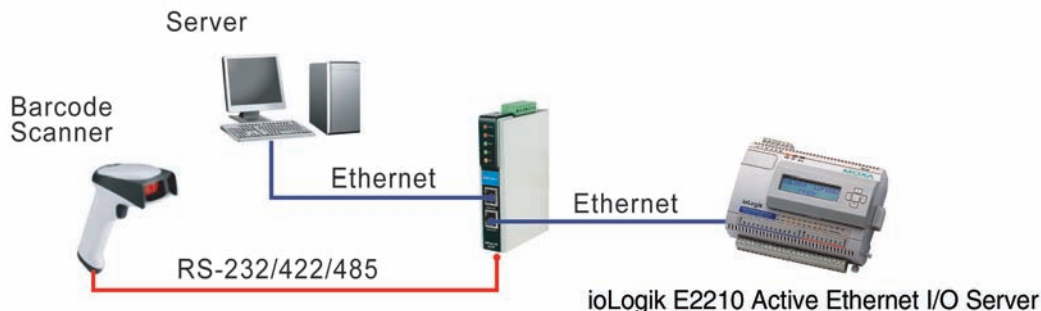
NPort® IA device servers provide easy and reliable serial-to-Ethernet connectivity for industrial automation applications. The device servers can connect any serial device to an Ethernet network, and to ensure compatibility with network software, they support a variety of port operation modes, including TCP Server, TCP Client, and UDP. The rock-solid reliability of the NPort® IA device servers makes them an ideal choice for establishing network access to RS-232/422/485 serial devices such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays. All models are housed in a compact, rugged housing that is DIN-rail mountable.



Cascading Ethernet Ports Make Wiring Easy (10/100BaseTX models only)

The NPort® IA5150 and IA5250 device servers each have two Ethernet ports that can be used as Ethernet switch ports. One port connects directly to the network or server, and the other port can be connected to another NPort® IA device server or another Ethernet device. The

dual Ethernet ports help reduce wiring costs by eliminating the need to connect each device to a separate Ethernet switch.

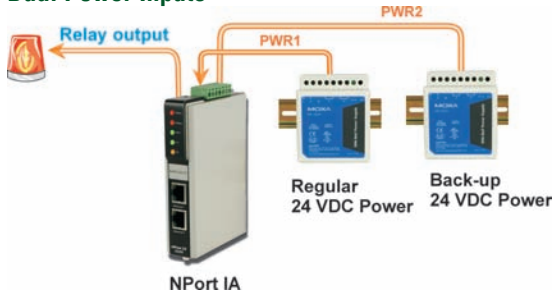


Redundant Power Inputs

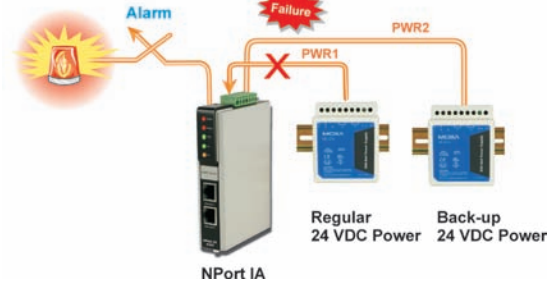
The NPort® IA5000 device servers have two power inputs that can be connected simultaneously to live DC power sources. If one power

source fails, the other source takes over automatically. Redundant power inputs help assure non-stop operation of your device server.

Dual Power Inputs



Power Failure Alarm



Relay Output Warning and E-mail Alerts

The built-in relay output can be used to alert administrators of problems with the Ethernet links or power inputs, or when there is a change in the DCD or DSR serial signals. The web console indicates which Ethernet link or power input has failed, or which serial signal has changed. An e-mail warning can also be issued when an exception is detected. These functions are valuable tools that enable maintenance engineers to react promptly to emergency situations.



Optical Fiber for Ethernet Communication

The NPort® IA5000 series includes 100BaseFX fiber models that support transmission distances up to 2 km for multi-mode models, and up to 40 km for single-mode models. Optical fiber is well-suited for industrial applications because it is immune to electromagnetic

noise and interference. For environments that experience high ground loop voltages, fiber provides the best isolation protection, and because there is no danger of sparking, optical fiber is safer than copper wire to use in hazardous environments.

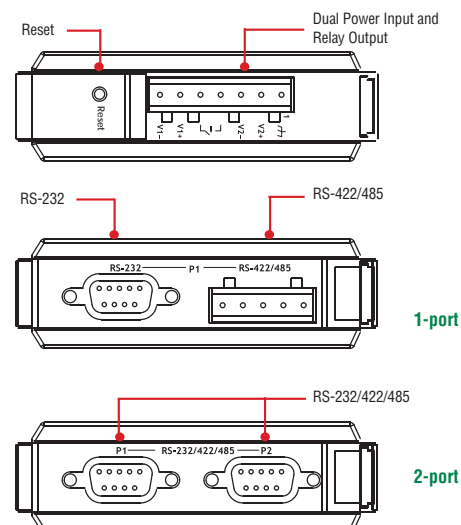
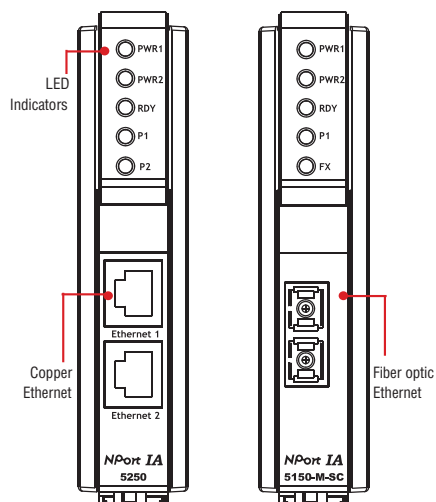
Industrial-grade Certification

To ensure safe and reliable operation in industrial environments, the NPort® IA5000 device servers have obtained various industrial certifications, including an IP30 rating for mechanical protection, UL508 safety certification for industrial control equipment, and

explosion-safe certifications for hazardous locations. Certifications include UL/cUL Class 1 Division 2 Groups A, B, C, D, and ATEX Class 1 Zone 2.



Appearance



Specifications

Ethernet Interface (NPort® IA5150/5150I/5250)

Number of Ports: 2

Speed: 10/100 Mbps, Auto MDI/MDIX

Connector: 8-pin RJ45

Magnetic Isolation Protection: 1.5 KV built-in

Optical Fiber Interface (NPort® IA5150-M-SC/5150I-M-SC/5150-S-SC/5150I-S-SC)

Fiber Port: 100 BaseFX, SC connector

Distance:

Multi mode: 0 to 2 km, 1310 nm (62.5/125 μ m, 500 MHz*km)

Single mode: 0 to 40 km, 1310 nm (9/125 μ m, 3.5 PS/(nm*km))

Min. TX Output: -20 dBm (Multi mode), -5 dBm (Single mode)

Max. TX Output: -14 dBm (Multi mode), 0 dBm (Single mode)

Sensitivity: -34 to -30 dBm (Multi mode), -36 to -32 dBm (Single mode)

Serial Interface

Number of Ports:

NPort® IA5150: 1

NPort® IA5250: 2

Serial Standards: RS-232/422/485

Connectors:

NPort® IA5150: 8-pin RJ45 for RS-232, Terminal Block for RS-422/485

NPort® IA5250: Terminal Block (5 terminals per port)

ESD Protection: 15 KV for all signals

Optical Isolation Protection: 2 KV (NPort® IA5150I, NPort® 5150I-M-SC, NPort® 5150I-S-SC)

RS-485 Data Direction Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS (RS-232 only), XON/XOFF

Baudrate: 110 bps to 230.4 Kbps

Serial Signals

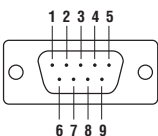
RS-232:

NPort® IA5150: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

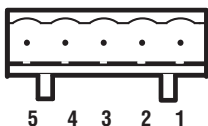
NPort® IA5250: TxD, RxD, RTS, CTS, GND

Pin Assignment

RS-232/422/485 DB9 male port



RS-422/485 Terminal Block Wiring



PIN	RS-232	RS-422/RS-485-4w	RS-485-2W
1	DCD	TxD-(A)	—
2	RXD	TxD+(B)	—
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—

PIN	RS-422/RS-485-4w	RS-485-2w
1	TxD+(B)	—
2	TxD-(A)	—
3	RxD+(B)	Data+(B)
4	RxD-(A)	Data-(A)
5	GND	GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND

RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTp

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Physical Characteristics

Housing: IP30 protection

Weight:

NPort® IA5150: 360 g

NPort® IA5250: 380 g

Dimensions: 29 x 89.2 x 118.5 mm (0.82 x 3.51 x 4.57 in)

Environmental Limits

Operating Temperature:

NPort® IA5150/5250: 0 to 55°C (32 to 131°F)

NPort® IA5150-T/5250-T: -40 to 75°C (-40 to 167°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 85°C (-4 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort® IA5150: 360 mA @ 12V max.

NPort® IA5150I: 420 mA @ 12V max.

NPort® IA5250: 440 mA @ 12V max.

NPort® IA5150-S-SC: 470 mA @ 12V max.

NPort® IA5150I-S-SC: 490 mA @ 12V max.

NPort® IA5150-M-SC: 500 mA @ 12V max.

NPort® IA5150I-M-SC: 510 mA @ 12V max.

Regulatory Approvals

Safety: UL60950 (E212360), UL 508, CSA C22.2 No. 60950, EN60950

Hazardous Location: UL/cUL Class I, Division 2, Groups A, B, C and D (E238559) (pending)

ATEX: Class I, Zone 2, EEx nC IIC (03CA24537) (pending)

Marine: DNV

EMI: FCC Part 15, CISPR (EN55022) Class A

EMS:

EN61000-4-2 (ESD), Level 3

EN61000-4-3 (RS), Level 3

EN61000-4-4 (EFT), Level 4

EN61000-4-5 (Surge), Level 3

EN61000-4-6 (CS), Level 3

EN61000-4-8

EN61000-4-11

EN61000-4-12

Shock: IEC60068-2-27

Freefall: IEC60068-2-32

Vibration: IEC60068-2-6

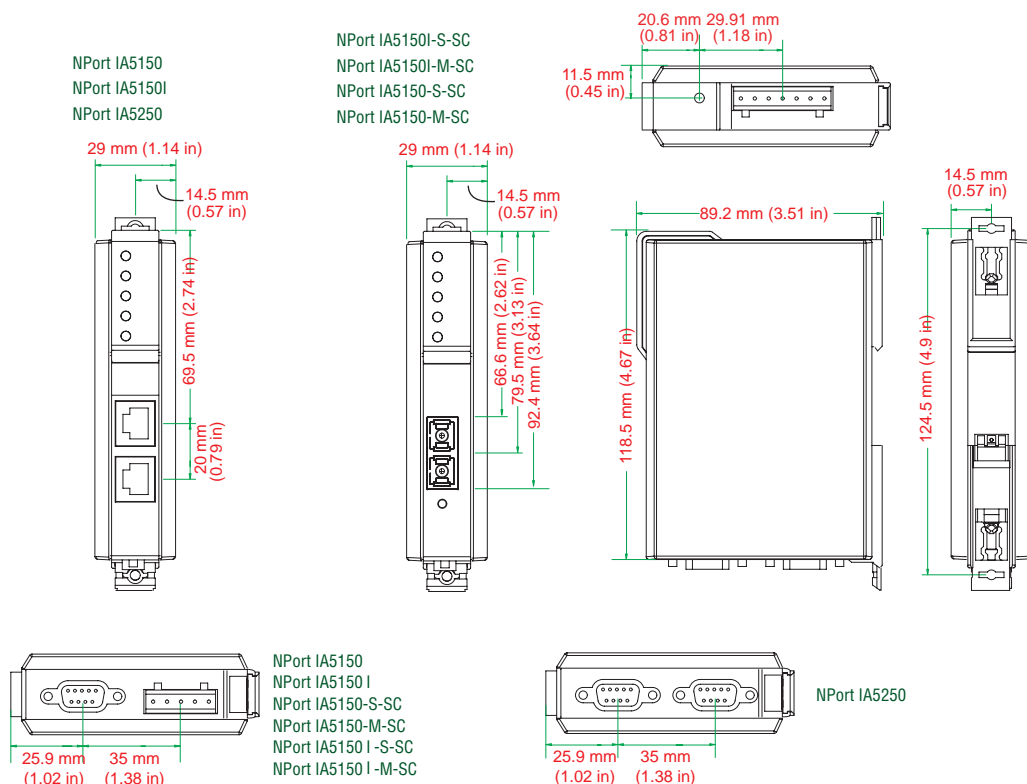
Dust-proof: IP30

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions



Ordering Information

Available Models

- NPort® IA5150:** 1-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP)
- NPort® IA5150-T:** 1-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP), wide temperature (-40 to 75°C)
- NPort® IA5150I:** 1-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP) and 2 KV optical isolation
- NPort® IA5150I-T:** 1-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP) and 2 KV optical isolation, wide temperature (-40 to 75°C)
- NPort® IA5150-M-SC:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) multi-mode fiber (SC connectors) ports
- NPort® IA5150-M-SC-T:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) multi-mode fiber (SC connectors) ports, wide temperature (-40 to 75°C)
- NPort® IA5150I-M-SC:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) multi-mode fiber (SC connectors) ports and 2 KV optical isolation
- NPort® IA5150I-M-SC-T:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) multi-mode fiber (SC connectors) ports and 2 KV optical isolation, wide temperature (-40 to 75°C)
- NPort® IA5150-S-SC:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) single-mode fiber (SC connectors) ports
- NPort® IA5150-S-SC-T:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) single-mode fiber (SC connectors) ports, wide temperature (-40 to 75°C)
- NPort® IA5150I-S-SC:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) single-mode fiber (SC connectors) ports and 2 KV optical isolation
- NPort® IA5150I-S-SC-T:** 1-port RS-232/422/485 device server with 2 10/100BaseF(X) single-mode fiber (SC connectors) ports and 2 KV optical isolation, wide temperature (-40 to 75°C)
- NPort® IA5250:** 2-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP)
- NPort® IA5250-T:** 2-port RS-232/422/485 device server with 2 10/100BaseT(X) ports (RJ45 connectors, single IP), wide temperature (-40 to 75°C)

Optional Accessories (can be purchased separately)

- Optical Fiber Patch Cord:** See page A-14
- Terminal Block for RS-422/485 ports:** See page A-7
- Power Jack to Terminal Block Cable:** See page A-7

Package Checklist

- NPort IA series device server
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

NE-4100 Series

10/100 Mbps embedded serial device servers

NE-4110S/4110A



NE-4120S/4120A

NE-4100T

- > 10/100 Mbps Ethernet interface
- > Up to 230.4 Kbps baudrate support
- > Choice of operation modes: Real COM, TCP Server, TCP Client, and UDP
- > DHCP, BootP, Static IP, and ARP supported
- > SNMP and e-mail alerts for event trapping and notification
- > Half the size of a credit card—only 57 × 40 mm
- > Low power consumption at 1.5W, with single +5V input

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



Overview

Moxa's NE-4100 embedded device servers are designed for manufacturers who want to add sophisticated network connectivity to their serial devices. Moxa's embedded device servers can be used to convert any device with a standard serial interface to an Ethernet-enabled device in no time. The NE-4100 embedded device servers

support 10/100 Mbps Ethernet, and provide ready-to-use operation modes, including TCP Server, TCP Client, and UDP. In addition, a Real COM driver is included for backward compatibility with legacy software.

SNMP and E-mail Alerts for Event Trap and Notification

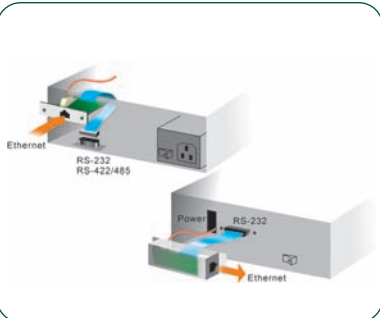
NE-4100 embedded device servers can be configured to send an SNMP trap or e-mail under the following conditions:

- Cold/warm start
- Password authentication failure
- Change in DSR/DCD line signal
- Change in IP address
- Change in password

On-site Configuration with Serial Command Mode

- Easy on-site configuration of network settings
- Simple command frame format
- Comprehensive command set for serial and network configuration
- Easily switch between software and hardware triggers
- Software reset

Typical Installation Examples



NE-4110: RJ45 Ethernet connector in stand-alone form factor



NE-4120: Pin-header Ethernet in stand-alone form factor

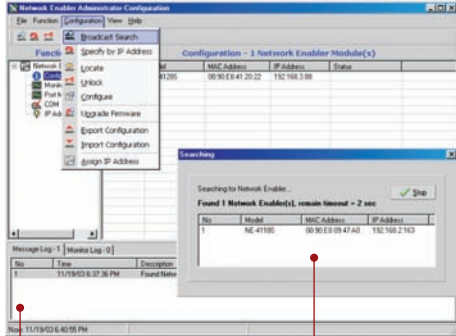


NE-4100T: Dual-in-line pin header in drop-in form factor

: Powerful, User-friendly Utilities

Web-based Configuration

NE-4100 embedded device servers can be configured with the web console, which can be accessed from the web browser of any networked computer.



System log for cold boot, warm boot, etc.

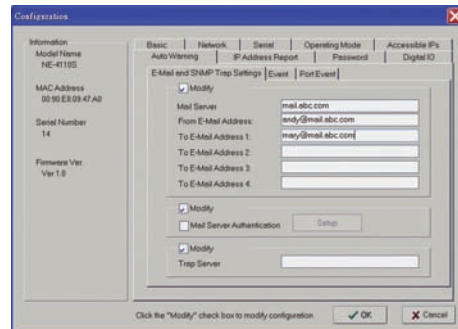
Search for installed embedded device servers

Configure and manage embedded device servers with Moxa's Windows Utility

Network Enabler Administrator is a powerful, Windows-based configuration and management tool for NE-4100 embedded device servers. With Network Enabler Administrator, users can modify IP addresses, update communication parameters, and configure all other

settings over the network. This utility has the following useful features:

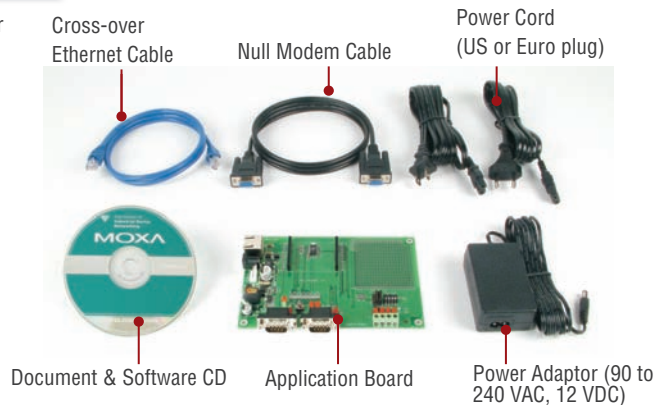
- Search your LAN for embedded device servers
- Export and import configuration parameters
- Upgrade firmware over the network
- Remotely monitor data traffic, serial line status, and TCP/IP connections
- Configure SNMP and e-mail alerts



Remotely configure serial, network, alarm, and other parameters

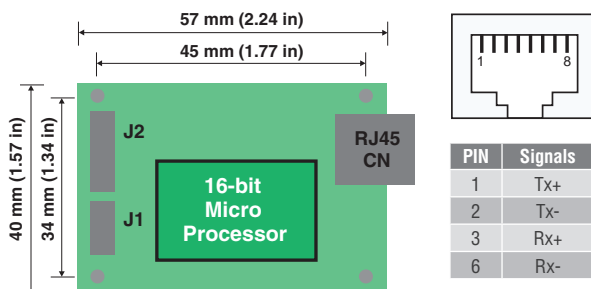
: NE-4100 Starter Kit

The Network Enabler Starter Kit includes an evaluation board, power adaptor, software, and serial and Ethernet cables to allow quick and easy evaluation of all embedded device server functions. The evaluation board is equipped with serial, Ethernet, digital I/O, and power circuits to help you test your modules and applications.

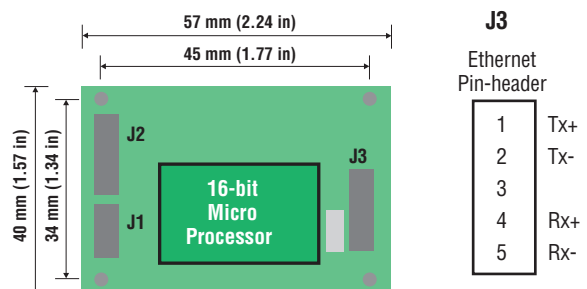


: Dimensions and Pin Assignment

NE-4110S/4110A



NE-4120S/4120A



J3

Ethernet Pin-header

1	Tx+
2	Tx-
3	
4	Rx+
5	Rx-

NE-4110/4120 Series

	J2	
GND	14 13	VCC(+5V)
GND	12 11	VCC(+5V)
DIO0	10 9	10M_LED
DIO1	8 7	100M_LED
DIO2	6 5	Ready_LED
DIO3	4 3	Reset
TxD1	2 1	RxD1

NE-4110S/4120S

	J1	
NC	10 9	NC
CTS0	8 7	RTS0
DSR0	6 5	GND
DTR0	4 3	TxD0
RxD0	2 1	DCD0

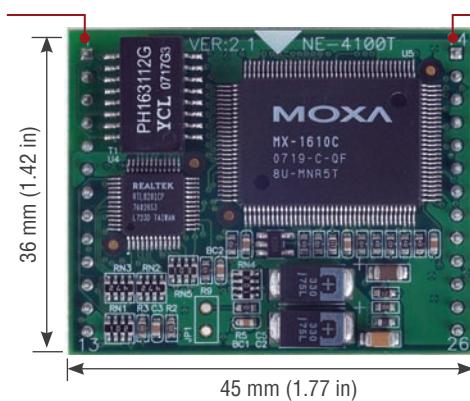
NE-4110A/4120A

	J1	
NC	10 9	NC
NC	8 7	NC
NC	6 5	GND
RxD- (Data-)	4 3	RxD+ (Data+)
TxD+	2 1	TxD-

For 2-wire RS-485 mode, Pin 3 is Data+, Pin 4 is Data-

NE-4110T

Pin No.	Signal
1	ETx+
2	ETx-
3	ERx+
4	ERx-
5	LED 10M
6	TxD0
7	RxD0
8	RTS0
9	CTS0
10	Reset
11	GND
12	GND
13	TxD1



Pin No.	Signal
14	PI00
15	PI01
16	PI02
17	PI03
18	LED 100M
19	DCD0
20	DSR0
21	DTR0
22	GND
23	Ready LED
24	+5V
25	+5V
26	RxD1

(45 × 36 mm, 26-pin DIL package, 2.54 mm pitch)

Specifications

Form Factor

Type:

NE-4110/4120: Ready-to-go stand-alone modules
NE-4100T: 26-pin dual-in-line package

Dimensions:

NE-4110/4120: 57 × 40 mm (2.24 × 1.57 in)
NE-4100T: 45 × 36 mm (1.77 × 1.42 in)

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps, Auto MDI/MDIX

Connectors:

NE-4110 Series: RJ45
NE-4120 Series: 5-pin pin header
NE-4100T: 26-pin dual-in-line

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 2

Serial Standards for Port 1:

NE-4110S/4120S: RS-232
NE-4110A/4120A: RS-422, RS-485-4w, RS-485-2w
NE-4100T: TTL

Serial Standards for Port 2:

TTL console port

RS-485 Flow Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF

Baudrate: 110 bps to 230.4 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND

RS-485-2w: Data+, Data-, GND

TTL (Port 1): TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

TTL (Port 2): TxD, RxD, GND

Digital I/O Pins

GPIO: 4 programmable I/O pins

Software

Network Protocols: ICMP, ARP, IP, TCP, UDP, DHCP, Telnet, HTTP, SNMP, SMTP

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, XP x64, 2003 x64), Linux Real TTY driver, Unix

Environmental Limits

Operating Temperature:

Standard Models: 0 to 55°C (32 to 131°F)

Wide Temperature (T) Models: -40 to 75°C (-40 to 167°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 5 VDC (±5%)

Power Consumption: 290 mA @ 5 VDC max.

Regulatory Approvals

EMC: CE (Class A), FCC (Class A)

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

: Ordering Information

Available Models

NE-4110S: Device server module for RS-232 devices, supports 10/100BaseT(x) with RJ45 connector

NE-4110A: Device server module for RS-422/485 devices, supports 10/100BaseT(x) with RJ45 connector

NE-4120S: Device server module for RS-232 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header

NE-4120A: Device server module for RS-422/485 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header

NE-4100T: Device server module for TTL devices, supports 10/100BaseT(x) with DIL package

NE-4110-ST: Starter kit for the NE-4110S and NE-4110A

NE-4120-ST: Starter kit for the NE-4120S and NE-4120A

NE-4100-ST: Starter kit for the NE-4100T

Package Checklist (modules)

- NE-4100 series module

Package Checklist (starter kits)

- NE-4100 series module
- NE-4100-ST or NE-4110-ST or NE-4120-ST evaluation board
- Universal power adaptor
- 2 power cords
- Null modem cable
- Cross-over Ethernet cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

WE-2100T Series

Wireless LAN embedded serial device servers



- > Connects serial devices to IEEE 802.11a/b/g networks
- > Choice of operation modes: Real COM, TCP Server, TCP Client, UDP, and RFC2217
- > Windows (including Vista!) real COM and Linux fixed TTY drivers provided
- > Wireless security with WEP, WPA, and WPA2
- > Select Any Baudrate between 50 bps and 921.6 Kbps
- > 9 programmable digital I/O channels
- > SSL/SSH encryption for configuration
- > Compact size and easily mounted housing

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



Overview

The WE-2100T is a secure and compact embedded wireless module for connecting serial devices to access points in infrastructure mode, or to other WE-2100T's in ad-hoc mode. When using the WE-2100T,

complex RF know-how is not needed to connect serial devices to a wireless Ethernet network. Encryption for secure data transfer is supported, along with the 802.11a/b/g radio specifications.

Operation Modes for Embedded Applications

The WE-2100T supports Real COM, TCP Server, TCP Client, UDP, and RFC 2217 operation modes, which are designed to fulfill the

requirements of embedded module applications. Complete driver support for Real COM mode is included and easy to install.

On-site Configuration with Serial Command Mode

- Easy on-site configuration of network settings
- Simple command frame format
- Comprehensive command set for serial and network configuration
- Easily switch between software and hardware triggers
- Software reset

Specifications

Form Factor

Type: Small metal housing that encloses advanced ARM-based 32-bit processor; supports both wireless and Ethernet connections

Dimensions: 54 x 40 x 13.3 mm (2.13 x 1.57 x 0.52 in)

Automatic Network Selection

Wireless or Ethernet: The WE-2100T will activate the Ethernet connection if detected at boot-up. If an Ethernet connection is not detected, the WE-2100T will choose wireless as the communication interface. Which interface to use can also be configured with the WE-2100T's configuration utilities.

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps, Auto MDI/MDIX

Connector: 44-pin dual-in-line

Magnetic Isolation Protection: 1.5 KV built-in

WLAN Interface

Standard Compliance: IEEE 802.11a/b/g

Network Mode: Infrastructure mode (a/b/g), Ad-Hoc mode (b/g)

Spread Spectrum Technology: DSSS, CCK, OFDM

5.15 to 5.25 GHz: 15 dBm @ 6 Mbps; 12 dBm @ 54 Mbps
5.725 to 5.825 GHz: 15 dBm @ 6 Mbps; 12 dBm @ 54 Mbps
2.412 to 2.483 GHz: 17 dBm @ 6 Mbps; 15 dBm @ 54 Mbps
2.412 to 2.472 GHz: 18 dBm @ 1 to 11 Mbps

5.15 to 5.25 GHz: 6 Mbps @ -90 dBm; 54 Mbps @ -72 dBm
5.725 to 5.825 GHz: 6 Mbps @ -89 dBm; 54 Mbps @ -72 dBm
2.412 to 2.483 GHz: 6 Mbps @ -90 dBm; 54 Mbps @ -73 dBm
2.412 to 2.472 GHz: 11 Mbps @ -87 dBm; 1 Mbps @ -94 dBm

Transmission Rate:

802.11a: 54 Mbps

802.11b: 11 Mbps

802.11g: 54 Mbps

Transmission Distance: Up to 100 meters (in open areas)

Wireless Security: AES, WEP 64/128-bit, WPA, WPA2, 802.11i

802.11i Authentication: TLS, PEAP/GTC, PEAP/MD5, PEAP/MSCHAPv2, TTLS/PAP, TTLS/CHAP, TTLS/MSCHAP, TTLS/MSCHAPv2, TTLS/EAP-MSCHAPv2, TTLS/EAP-GTC, TTLS/EAP-MD5, LEAP

Channels:

North America: CH1 to CH11, 5150-5825 MHz

Europe: CH1 to CH13, 5150-5875 MHz

Japan: CH1 to CH14, 5150-5350 MHz

Antenna Connector: Reverse SMA

Antenna Gain: 2 DBi

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Paris et Nord

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tél 03.44.91.04.14 - fax 03.44.91.04.15
www.airicom.com - info@airicom.com

AURECOM

Bretagne et
Grand Ouest

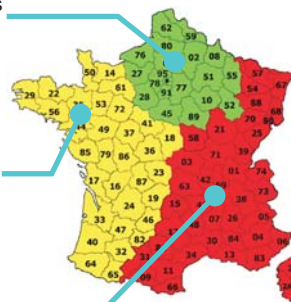
La Ville Cognac - 56430 Maunon
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Votre interlocuteur



Groupe **2AR**